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С С С Р
СЕГОДНЯ И ЗАВТРА

(Популярный иллюстрированный справочник)

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On October 25th, 1917, a new era was opened in the history of mankind, when the working class of Russia led by the Communist Party and Lenin founded the first socialist country in the world.

The young Soviet Republic was faced with the immensely difficult task of building up a socialist society in an enemy-surrounded, backward country, a society that was the dream cherished through long centuries by all the oppressed and downtrodden in the world; a society to the creation of which were directed all the thoughts of such great minds as Thomas More, Campanella, Saint-Simon, Fourier and Robert Owen, the utopian socialists, of Herzen, Chernyshevsky, Dobrotyubov and Sun Yat-sen, the revolutionary democrats, and many others; for which the fighters of the Paris Commune in 1871 and the fighting squads of workmen of Krasnaya Presnya in 1905 gave their lives; which was scientifically substantiated and elaborated by Marx, Engels and Lenin, the great teachers and leaders of the proletariat.

In order to build socialism there had to be peace. On the second day of its existence the Soviet Government approached the belligerents suing for immediate cessation of the useless bloodshed and for a fair peace without annexations or contributions.

In answer, imperialists of fourteen countries launched an armed intervention against Soviet Russia. The workers and peasants of Russia fought a three-year severe battle with the home counter-revolutionary and interventionist forces. The price of devastation and economic dislocation was paid for the hard-won victory. Few as they were, the factories and plants were locked in silence, the war-ravaged fields lay fallow, there was a scarcity of food, clothing and fuel.

Is it possible to begin building socialism in a ruined and pauperized country? Is it not simpler to appeal to the world capital for help and shelve the idea of socialism till happier days?

Thus reasoned those who were openly hostile or simply ill-disposed to the Soviets, thus reasoned the sceptics and the doubting. They did not realize that the building of socialist society had already begun;



that the foundation-stone of socialism had been laid when the first decrees of the Soviet Government gave the people possession of the land and its mineral wealth, of the factories, plants, banks and railways; that the abolition of private ownership of means of production was the greatest of all strides ever made towards the elimination of the exploitation of man by man; that these resolute measures adopted by the Soviet Government had welded Russia's workers and peasants together and inspired them to stand for the revolution till the glorious end.

"We have all the requirements for building socialism," said the Communists. "We have inexhaustible natural wealth, talented and hard-working people, and our own government upheld by the most wonderful strength in the world, that of the workers and peasants. The working people the world over will lend us support."

"But you are short of food, you have no steel, coal, oil or machinery, and you cannot expect to build anything with your bare hands," argued the ill-wishers.

History has decided the argument in favour of Lenin and the Communist Party. Soviet power is only a little over 40—an age of maturity in the life of a man, and an age of youth in the life of a social system. Everything that has already been achieved in that historically short space of time—less than one generation's lifetime—forcefully corroborates the great advantages of socialism and convincingly proves that the future belongs solely to this social system.

The Soviet society's tomorrow is not just a dream. It is already assuming tangible form. Construction on a magnificent scale is underway on the infinite expanses of the Land of the Soviets, in its cities and towns, in the heart of its forests and steppes, and along the banks of its mighty rivers. Free men take mastery over nature, they selflessly work to make the inexhaustible riches of their land serve society. The Soviet people, led by the Communist Party, are realizing Lenin's programme of building a communist society.

This book will tell the reader of the Land of Socialism—the Soviet Union—of its today and tomorrow.

A Sixth of the Globe

FROM THE ARCTIC TO THE SUBTROPICS

The U.S.S.R. is the largest country in the world, it is located on two continents—Europe and Asia.

The Soviet Union occupies a territory of 22,400,000 sq. km. or one-sixth of the inhabited surface of the earth.

It is almost three times the size of the U.S.A., seven times that of India, sixty that of Japan, and seven hundred that of Holland.

The U.S.S.R. northernmost point is the northern tip of the Rudolf Island of the Franz Josef Land archipelago ($81^{\circ}51'N$), and the southernmost is close to the Childukhter village near Kushka, a town in Turkmenia ($35^{\circ}08'N$).

From north to south the U.S.S.R. measures $46^{\circ}43'$ latitude or 5,000 km., i.e., more than half the distance from the equator to the North Pole.

The westernmost point is to be found on a sandy spit in the Baltic Sea close to Kaliningrad ($19^{\circ}38'E$), and the easternmost on the Ratmanov Island in the Bering Straits ($169^{\circ}02'W$).

From west to east the U.S.S.R. measures $171^{\circ}20'$ longitude or 10,000 km., i.e., approximately one-quarter of the length of the equator.

The U.S.S.R. is located in eleven time zones.

When the time is 5 a. m. in Chukotka Peninsula it is only 7 p. m. of the night before in Moscow.

Each of the 11 time zones welcomes the New Year in at a different time.

The size of the country is an important factor in the development of the U.S.S.R. national economy. As a rule, the greater the area, the greater and more varied its natural resources.

The Soviet frontier stretches for over 60,000 km., which is one and a half times the length of the equator. No other country in the world has a frontier line as long or with as many countries bordering on it.

Soviet neighbours in Europe are Norway, Finland, Poland, Czechoslovakia, Hungary and Rumania, and in Asia: Turkey, Iran, Afghanistan, China, Mongolia and Korea.

Topographically the territory of the U.S.S.R. may be divided into two almost equal parts separated by the Siberian river Yenisei. Plains

and lowlands prevail in the western part, while the eastern is almost wholly mountainous.

The country's extensive plains favour the development of agriculture. The Great Russian plain and the West-Siberian lowlands are the main agricultural regions. Plains also facilitate the use of various means of transport. A country as vast as the Soviet Union requires railways and roads measuring thousands of kilometres.

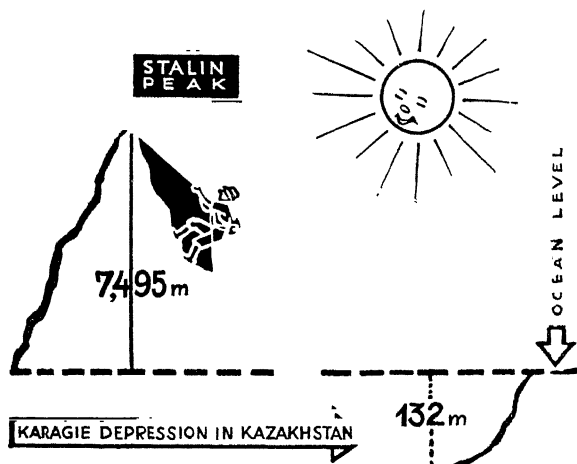
The difference between the highest and lowest points is 7,627 m.

An almost uninterrupted chain of mountain ranges runs along the southern boundaries of the U.S.S.R.—the Carpathians, the Crimean mountains, the Caucasus, the Pamirs, the Tien Shan and the Altai ranges.

The largest ice caps lie on the "Roof of the World"—the Pamirs and Tien Shan mountains. The Fedchenko glacier in the Pamirs, extending for 71.2 km., is the longest valley glacier in the world.

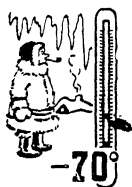
The east of the U.S.S.R. is edged with the Pacific mountain chain: the Koryaksky, Kamchatka, Sakhalin and Kuril Islands ranges. Earthquakes and eruptions are frequent occurrences in these parts.

U.S.S.R. HIGHEST AND LOWEST POINTS



The Elbrus (5,633 m.) is the highest point in the Caucasus and in Europe. Mount Klyuchevskaya (4,750 m.) is the highest active volcano in Europe and Asia.

There are splendid meadows in the mountains which cover a considerable part of the country. These meadows are excellently suited for grazing cattle. The mountains are also rich in minerals.



The *climate* in the Soviet Union is highly varied.

The lowest temperature recorded is about -70°C . (94°F .) in North-Eastern Siberia, and the highest is about $+50^{\circ}\text{C}$. (122°F .) in Termez.



All the principal types of climate, except the tropical, are to be found within the boundaries of the Soviet Union. On the whole, the climate of the U.S.S.R. may be described as moderate and continental. In the Far North it is cold; in Transcaucasia, on the Black Sea littoral, as well as on the southern shores of the Crimea and in some valleys of Central Asia it is subtropical: frosts are almost unknown, and the average January temperature is above zero.



When the temperature falls below 50°C . (58°F .) in the north of Siberia, roses bloom in Western Georgia.



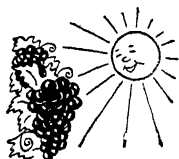
Precipitation is highest in the Caucasus, on the Black Sea littoral, and lowest in Central Asia. The quantity decreases from west to east.

The highest annual precipitation in the U.S.S.R., recorded on the slopes of the Caucasian mountains, is approximately 4,000 mm. In some parts of Central Asia annual precipitation is less than 100 mm. In certain regions of Central Asia and the Transcaucasia snow seldom falls, while on the south-eastern Kamchatka seaboard it is so copious that houses are sometimes snow-drifted.

These dissimilarities in climate have their own economic advantages. The northern coniferous woods are slow in growth and produce strong and resilient soft-wood with narrow annual rings, which is known for quality on the world market. Animals grow a thick, warm covering to protect themselves from the severe cold, and, as a result, Siberian furs are considered the finest in the world. On the other hand, many of the southern regions are dry and hot in the summer, and these conditions are best suited for growing excellent grain and luscious grapes.

The dissimilarity in climate and relief in different parts of the country is responsible for their greatly varied soils, plant and animal life.

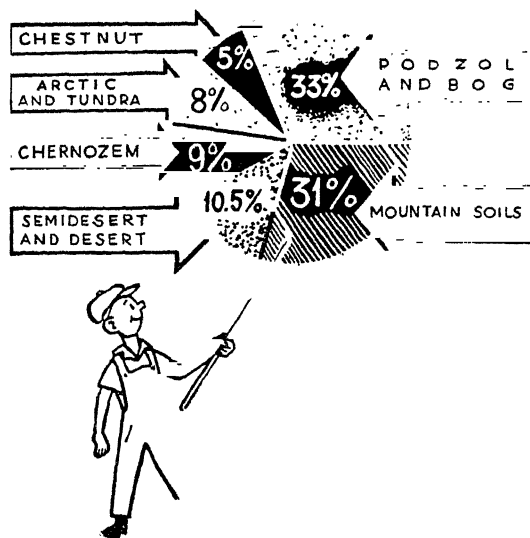
In some parts there are swamps on top of the eternally frozen subsoil, while in others there are expanses of typically southern black soil. One



may find dwarf birches and evergreen lianas, the snowy owl and the pink flamingo.

The territory of the U.S.S.R. is divided into five zones: the tundra, the forest, the steppe and forest-steppe, the deserts and semideserts, and the subtropics.

U.S.S.R. SOIL ZONES



Peat-bog soils prevail in the north, in the tundra zone. The soil typical of the forest zone is podzol which, when fertilized, is quite suitable for farming. Secure from the danger of droughts, this zone may yield steady crops, even surpassing those in the black-soil (chernozem) steppe. Peat-bogs also occur occasionally.

Highly fertile black soil covers the steppes and forest-steppes.

The total black-soil areas in the U.S.S.R. are four times the territory of France.

Large tracts of grey-earth soils occur in the deserts and semideserts which, when artificially irrigated, become very fertile.

Altogether, there are over 6,500,000 hectares of irrigated land in the Soviet Union.

The flora of the Soviet Union includes a good half of all the known species in the world.

Lichen, moss, berries and dwarf trees grow in the tundra. Under the Soviet government agriculture has been introduced and developed in some tundra regions.

The forest zone is a great storehouse of excellent soft-wood. Of wide renown are the Olonetskaya mastwood pine, the Vologda spruce, the Far Eastern cedar, the Karelian birch and others.

The Soviet Union owns a third of the world's forests covering a total area of 7,000,000 sq. km. which is approximately equivalent to the territory of the U.S.A.

In valuable timber, the U.S.S.R. is the richest country in the world. Its forests produce over 1,200 species of trees and shrubs.

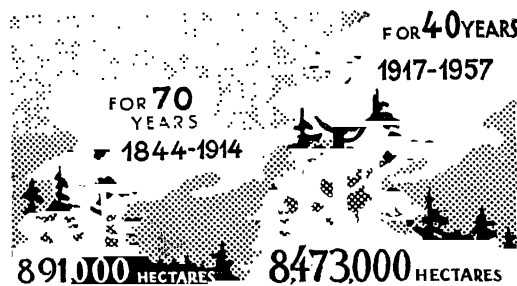
The following are the most widespread:

larch	40%	fir	3%
pine	16%	saksaul	3%
birch	13%	oak	1%
spruce	11%	beech	0.4%
cedar	5%	other trees	7.6%

Approximately half of the world's coniferous forests belongs to the Soviet Union.

The following nut and fruit trees are also of importance in the country's economy: walnut, pistachio, almond, chestnut, pear, apple, *alycha* (damson), hazel-nut, and others.

Millions of hectares of new woods have been grown since the Revolution, and in the post-war years shelter-belt planting has been launched on a tremendous scale.



The forest-zone meadows produce highly nutritious grasses. Groves give way to fields in the forest-steppe zone. The steppes and forest-steppes are the country's bread-basket—the land of wheat, barley, sugar-beet and other field crops.

Vast expanses of scorching sand—the Kara-Kum, Kyzyl-Kum and Muyun-Kum deserts—lie between the north and south grey-soil regions.

Vegetation is naturally poor in the deserts and semideserts (worm-wood, saksaul, camel thorn and *eryngium*) but good crops of cotton,

rice, fruit and grapes are grown in the artificially irrigated fields.

Plants thrive in the subtropics, with their warm and humid climate and fertile soils. This is a country of evergreens (thickets of cherry-laurels, rhododendrons, boxes, and lianas), of tea and citrus plantations, and groves of eucalyptus, cork-oak, tung-tree and bamboo.

Juniper and oak forests, and groves of Mediterranean pine alternating with vineyards and orchards prevail on the southern shores of the Crimea and on the Black Sea littoral of the North Caucasus where the climate is comparatively dry (Mediterranean).

The *fauna* of the U.S.S.R. is notable for its variety. Fur-bearing animals (squirrel, musk-rat, sable and others) rank first in economic importance.

The U.S.S.R. is the leading country in the quantity, variety and value of furs put on the world market.

The rivers, lakes and seas are rich in fish.

The fish industry handles approximately 150 types of fish, among them the salmon, sturgeon, cod and sprat.

In fish output the Soviet Union ranks third in the world (after Japan and the U.S.A.).

The U.S.S.R. has a serviceable *network of internal water-ways*. Some of the rivers, like the Ob, Volga and Amur, flow placidly across plains, while others, like the Angara, Kura and Terek, move with great swiftness and abound in rapids.

The U.S.S.R. numbers over a hundred thousand rivers each with a basin of not less than 100 sq. km., and one hundred and fifty thousand rivers of over 10 km. in length.

The Ob has the largest basin in the U.S.S.R. (2,425,000 sq. km.).

The Lena is the longest river, measuring 4,320 km. without its tributaries.

The Yenisei is the biggest river in volume of water — it discharges an average of 550 cu. km. of water into the sea a year.

The Volga (3,690 km.) is the biggest river in the European part of the Soviet Union; it also carries more cargo and passengers than any other river in the country.

Ships are sailed and timber is rafted down the rivers, which are also utilized for artificial irrigation and production of electric power.

In hydro-power resources the U.S.S.R. ranks first in the world. The potential capacity of only the big rivers is estimated at 300,000,000 kw.

The U.S.S.R. has over 250,000 *lakes*, among them the vast lake-seas—the Caspian and the Aral, the deep mountain lakes—the Baikal and the Issyk-Kul, and numerous shallow salt lakes in Kazakhstan and Central Asia.

The Caspian Sea is the largest lake in the world. The Baikal is the deepest.

Lakes make the richest fisheries. A number of the lakes yield valuable salts.

FIVE LARGEST LAKES IN THE U.S.S.R.

(Area in sq. km.) (Depth in m.)

The Caspian Sea .	395,000	980
The Aral Sea . . .	65,500	68
The Baikal	30,500	1,741
The Ladoga Lake .	17,700	225
Balkhash	17,400	26

MINERAL DEPOSITS

The country's mineral wealth was little explored in tsarist Russia. Less than one-tenth of the land had been surveyed by geologists. At the turn of the century there was *one* geologist appointed to the whole of Siberia. According to pre-revolutionary data Russia was credited with only one per cent of the world's supply of iron ore, one per cent of the world's phosphorites and three per cent of coal. The deposits of nickel, potassium, boron, sulphur and bauxite were not known at all.

The rapid growth of industry in the U.S.S.R. was accompanied by large-scale prospecting for mineral deposits. Within a short space of time the known deposits were further explored and hundreds of new sources were discovered. At this writing, all the minerals occurring in the crust of the earth have been discovered in the Soviet Union in quantities sufficient to satisfy the growing requirements of the national economy.

In deposits of coal the U.S.S.R. ranks first in the world.

Its share in the world's explored coal deposits equals 57 per cent (over eight billion tons).

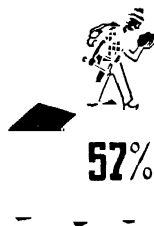
The chief coal-bearing regions are: Donbas (25 per cent of the country's deposits), Kuzbas (22 per cent), and Karaganda. Vast supplies of coal have been found and are being mined in the north of the European part of the U.S.S.R. and also in Siberia, i.e., in the Pechora, Lena and Tunguska river basins. The reserves are estimated at over 1,500,000 million tons.

The U.S.S.R. is one of the leading countries in oil resources.

The chief oil regions are Baku, the plateau between the Volga and the Urals (called "Second Baku"), the North Caucasus, the Carpathian part of the Ukraine, the Emba basin, and Sakhalin.

In recent years more and more derricks have been springing up on the Caspian Sea, where large deposits of oil have been discovered under the water.

Enormous natural gas resources have been explored in the Volga region, the Ukraine, Stavropol Territory, Komi A.S.S.R. and Central Asia.





In peat resources the U.S.S.R. holds first place in the world, and has a 60 per cent share of the world peat supplies.

Almost eighty per cent of the country's peat reserves belongs to Western Siberia (approximately 70,000 million tons), to the North of the European part of the U.S.S.R. (approximately 40,000 million tons), and to Eastern Siberia.

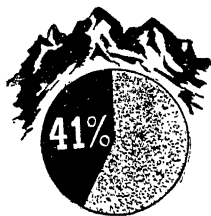
The U.S.S.R. has the greatest resources of iron ore in the world.

The Soviet Union's share of the total explored iron ore deposits in the world is 41 per cent.

The chief iron ore regions are Krivoi Rog and Kerch, (33 per cent of the U.S.S.R. deposits), the Urals (19 per cent), Kazakhstan (20 per cent), the Kursk Magnetic Anomaly, Eastern Siberia and others.

The Soviet Union holds first place in the world for copper, lead, wolfram, manganese ore, bauxite, nickel, mercury, mica and zinc resources, and one of the first for magnesite, cobalt and molybdenum resources.

There are also large reserves of potassium salts (54 per cent of the world resources), phosphorites and apatites (first place in the world), common salt, asbestos, diamonds and building materials. Great stores of diamonds have been found in Western Yakutia. The U.S.S.R. is exceptionally rich in limestone and chalk, the latter serving as raw material in the cement industry. Besides, there are good reserves of natural facing materials such as granite, marble, tufa, etc.



OVER 208 MILLION

In population the Soviet Union holds third place in the world (after China and India).

The 1959 census returns are 208,826,000 as compared to the 1913 figure of 159,200,000 (within present-day boundaries).

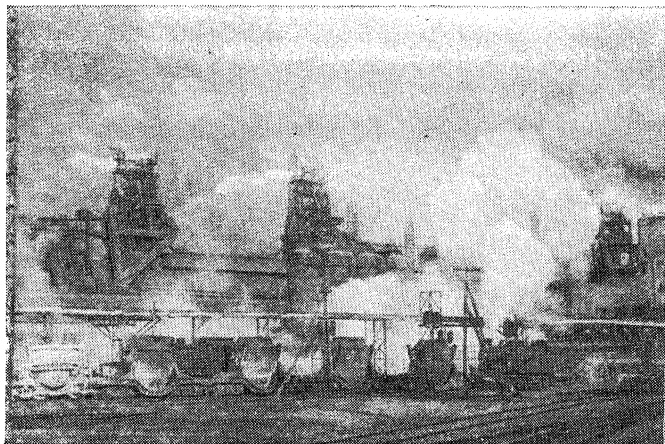
The population of the Soviet Union is growing steadily as the living standard rises. Mortality is dropping. Child mortality has been sharply reduced.

The annual birth rate is over three and a half million.

Owing to the industrialization of the country, there has been a large increase in urban population.

In 1913 (within present-day boundaries) the country's urban population was 28,100,000 whereas in 1959 it was 99,800,000.





Iron and Steel Works, Magnitogorsk



Norilsk

In Soviet times hundreds of new towns have been built (including newly-founded towns and towns transformed from workers' settlements and villages). Population has also grown considerably in the old towns.

There are over four and a half thousand urban-type settlements in the U.S.S.R. In 1959, the Soviet Union numbered twenty-five towns with a population of over five hundred thousand (as compared to three towns in 1926).

Seven largest cities in the U.S.S.R.

	(Population according to the 1959 estimate)
Moscow	5,032,000
Leningrad	3,300,000
Kiev	1,102,000
Baku	968,000
Gorky	942,000
Kharkov	930,000
Tashkent	911,000

The Soviet Union is inhabited by many nations, big and small, numbering over a hundred.

Russians, comprising more than half of the entire population, inhabit the central, northern and, partly, southern regions in the European part of the U.S.S.R., as well as the Urals, Siberia and the Far East.

The south-western part of the U.S.S.R. is peopled by Ukrainians (comprising a fifth of the entire population) and Moldavians.

The west is inhabited by Byelorussians, Lithuanians, Letts and Estonians; the north and

RUSSIANS

100,391

THE FIVE LARGEST NATIONALITIES PEOPLING THE U.S.S.R.

(according to the 1939 census, returns in thousands)

UKRAINIANS

35,611

BYELORUSSIANS

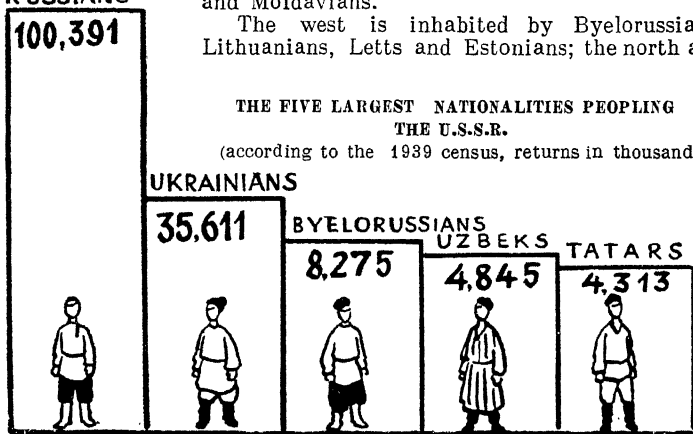
8,275

UZBEKS

4,845

TATARS

4,313



north-east of the European part of the U.S.S.R. by Karelians, Komi and Nentsi; the east by Tatars, Bashkirs, Udmurts, Mari, Chuvashes and Mordvinians.

The Caucasus is peopled by Georgians, Azerbaijanians, Armenians, Ossets, Kabardinians, Balkars, Chechens, Ingushes, Abkhazians, Avars, Circassians, Adyghei, Darghins, Lakhs, and Lezghins. Kazakhstan and Central Asia are peopled by Kazakhs, Uzbeks, Tajiks, Turkmen and Kirghiz. The Kalmyks live in the Volga region, while the population of Siberia and the Far East comprises Buryats, Khakass, Tuvinians, Yakuts, Evenks, Chukchi, Koryaks and others.

The Socialist System

Information on the size, natural wealth, number and composition of the population gives one some idea of the opportunities open to the country in question.

Economic returns show how these opportunities are being made use of.

However, in order to visualize the country as a whole, to see it not just the way it is today but also the way it will be tomorrow, one should know the main thing—the essence of its social system. One should know:

- who owns the country's wealth,
- how production is organized,
- how products are distributed,
- what the social structure of the population is,
- who manages the country,
- how the people live and what the relations between them are.

PROPERTY

The basis of any social system is one or another form of ownership of the means of production of material values.

The form of ownership, determining the relations between people in the process of production, and the accepted system of appropriation of labour products, exercises a decisive influence on the structure of society and all its bodies—from the government down to the family.

In the old Russian society almost two-thirds of the land was owned by the exchequer, the royal family, the church, the landlords and the kulaks.

Tsar Nicholas II owned eight million dessiatines of land, prince Galitsin owned one million, and Rukavishnikov, a landlord, eight hundred thousand dessiatines.

Mills, factories, mines, railways and banks were owned by Russian and foreign capitalists. Each branch of national economy had its own uncrowned but no less powerful kings.

The coal industry was ruled by Avdakov and von Dietmar.

Metallurgy was in the hands of Putilov, Yasyukovich, Goujon, as well as Belgian and other corporations.

The oil industry had Nobel, Lianozov, Belozersky and Mantashev for masters.

The textile industry was monopolized by Konovalov, Konshin, Morozov, Prokhorov, Stakheyev and Vtorov.

Banks were controlled by French and English financiers and stockjobbers, and the Russian bankers Utin, Plotnikov, Kamin-ka, Soloveichik, Manus, Ryabu-shinsky, Tereshchenko and others.

These people and their like had control over all the national wealth of Russia, made fortunes out of the work of millions of people, and ruled the country's destinies.

Their hour struck: the socialist revolution gave the means of production to the working people.

The land was declared the people's property and given to those who worked on it. The peasants received gratis over 150 million hectares of land formerly owned by the landlords and the church.

The banks, industrial undertakings, railways, and other means of production became the property of the socialist state. With the people becoming the owners of all the riches of their country, the cherished dream of the oppressed and downtrodden came true.

In 1928 the share of the socialist sector in gross industrial output equalled 82.4 per cent, and by 1937 it reached 99.8 per cent.

This was not the end of the socialist revolution, however. On the contrary, it was only the beginning. Socialism could not be built until social wealth had been multiplied many times over.

The people, freed from exploitation and led by the Communist Party, solved this problem in a remarkably short period of time. The whole country became a gigantic construction site: mills and factories were put into commission one after the other, new towns sprang up, electric power stations were built, canals were dug and roads were laid.

In the hands of the people, property assumed a wonderful trait—to grow and expand without end.

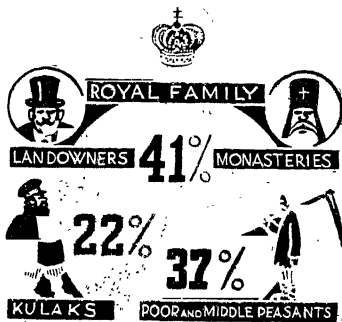
In 1957 there were over two hundred thousand industrial enterprises in the U.S.S.R. and a hundred thousand projects under construction.

Approximately twelve thousand large state industrial enterprises have been built and commissioned in the post-war years (1946-58).

In the '30s, when industry could afford to equip agriculture with machines in growing numbers, collectivization was launched on a mass scale. Organizing small peasant households into collective farms on the principle of voluntariness was the second way of going over to socialist ownership. After collectivization had been put through, socialist ownership and the socialist system of economy, founded on it, triumphed in all branches of national economy.

Today, the economic basis of the U.S.S.R. is the socialist ownership of the means of production in its two forms:

LAND DISTRIBUTION IN TSARIST RUSSIA



State property (belonging to the whole people)

The land, its mineral wealth, waters, forests, mills, factories, mines, transport, banks, communications, large state-organized agricultural enterprises (state farms, repair and maintenance stations), the bulk of the dwelling-houses in the cities and workers' settlements.

Collective-farm and co-operative property (owned by collective farms and co-operatives).

The commonly-owned enterprises of collective-farm and co-operative organizations, with their livestock and implements, the products of the collective farms and co-operatives, as well as their common buildings. The land utilized by collective farms is secured to them for their use free of charge and for an unlimited time.

State enterprises and collective farms are socialist enterprises. Since both in industry and agriculture the relations of production are based on socialist principles, there are neither the exploiting nor the exploited. These enterprises are built on a uniform principle of product distribution according to the amount and quality of work done. This is the main thing, the principle that brings them closer together and forms their common basis.

However, there is an important difference between the state enterprises and the collective-farm and co-operative enterprises, i. e., a higher degree of socialization in the former. In industry, transport, on construction sites and state farms means of production belong to the state, to the whole people.

In collective farms only part of the means of production, that is land, is the property of the state—i. e., belongs to the whole people. Everything else, primarily the produce, belongs to the farm.

The current seven-year plan envisages a rapid growth of agriculture together with a further improvement of socialist relations of production bringing closer together the two forms of socialist property—the collective-farm and public property—by means of strengthening and developing the collective-farm system, increasing the non-distributable assets, and extending inter-farm production ties through the joint organization of industrial enterprises, joint building of schools, boarding-schools, clubs, hospitals, etc.

Public ownership which is a predominant form of ownership in the U.S.S.R. means that all the working people and all the classes of society are equal with respect to the means of production, that no one may own them privately and no one may exploit the labour of others.

It means that society is enabled to consciously apply the economic laws, to plan the development of production, and thus ensure a steady rise in the well-being of all its members.

It means that the only source of subsistence of all its able-bodied members is work, which is recompensed according to quality and quantity.

It means that the rate of labour remuneration directly depends on the level of social wealth: the wealthier the society, the wealthier its members, and all of them are equally interested in promoting the growth of socialist production.

It means that the relations of production in socialist society are characterized by *comradely co-operation and mutual assistance among men free from exploitation.*

The Soviet socialist society also admits *personal property* such as savings and objects of private and household use. A special form of personal ownership is the collective-farm household property.

Personal property is based on and is inseparably linked with public property. As the latter multiplies and the nation's wealth grows, the output of goods to satisfy the personal needs of the working people also increases.

"The personal property right of citizens in their incomes and savings from work, in their dwelling-houses and subsidiary husbandries, in articles of domestic economy and use and articles of personal use and convenience, as well as the right of citizens to inherit personal property, is protected by law." (Article 10 of the Constitution of the U.S.S.R.)

Citizen's personal property may under no circumstances be used as a source of gain or exploitation. For example, no one is prohibited from owning a car, but it is against the law to turn it into a private taxi.

PRODUCTION

The principal aim of socialism is to develop productive forces to such a level that full satisfaction could be ensured of all the constantly growing requirements of the whole society, and that, in due course, the communist principle of distribution could be adopted—to each according to his needs.

This aim can only be achieved on condition that socialist production is continuously increased and perfected with the introduction of new machines and technique and with growing labour productivity.

The political power of the working people corresponds to the socialist system of economy and to the people's ownership of the means of production. The government of workers and peasants upholds the basic, vital interests of the working people and enjoys the wholehearted support of the masses.

Socialist ownership of the means of production enables the state to exercise planned guidance of national economy, to carry out its economic-organizational function on the basis of scientific analysis and conscious application of the economic laws of socialism.

The economic-organizational and cultural-educational work of the Soviet state embraces all aspects of life in socialist society. "The economic life of the U.S.S.R. is determined and directed by the state national-economic plan with the aim of increasing the public wealth, of steadily raising the material and cultural standards of the working people, of consolidating the independence of the U.S.S.R. and strengthening its defensive capacity." (Article 11 of the Constitution of the U.S.S.R.)

The state plans the development of the national economy: it distributes the material, labour and financial resources, determines the volume and pattern of production and capital construction; deter-

mines the rate of growth of labour productivity based on the application of new machinery, the volume and composition of the home and foreign trade turnover; fixes the prices of goods in state and co-operative trade, the rates of pay, etc. The state directs the development of the economy of the collective farms, allowing for their specific features as co-operative enterprises.

Every thrifty husbandman works out at least a rough estimate of the means he will have at his disposal and the best way to utilize them. On a socialist-economy scale it is all the more important to keep a record of the needs and requirements, to organize efficient production and distribution of material wealth, and to ensure a balance of forces in production.

The ability to plan the development of national economy, resulting from the establishment of socialist ownership of means of production and from the new economic laws, is the greatest advantage of the socialist system over any other system.

A far-sighted husbandman puts something aside out of his budget to save up for some expensive purchases. In the same way, socialist society reckons up its needs and plans its resources, allowing for more than the current day's requirements. It has to think of the future, to ensure a continuous increase in the output and the rate of development of production. Long-term planning is an indispensable condition for building socialist and communist society.

The first long-term scientific plan of economic development ever known in history was the GOELRO Plan (The State Plan for the Electrification of Russia), elaborated in 1920 on the initiative and under the guidance of Lenin, and adopted by the Eighth All-Russian Congress of Soviets.

The GOELRO Plan was not limited to the sphere of electric power alone—it was a complex programme of national-economy development, setting down concrete tasks for every branch of industry, transport and agriculture. The principal aim, outlined by the plan, was to radically reconstruct national economy and create a material base of socialism—large-scale machine industry.

The plan envisaged doubling the 1913 gross industrial output in ten or fifteen years' time, which meant a thirteen- or fourteen-fold increase as compared with the 1920 figures, the year when the plan was launched. The plan was fulfilled two or three times over.

The principles of GOELRO were placed at the basis of and followed in the five-year plans, which became an integral part of the programme of building socialism in the U.S.S.R.

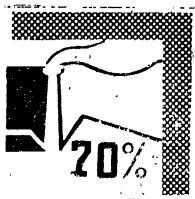
Each five-year plan raised the country to a new and higher level of development, enabling it to pose and solve increasingly difficult problems in all spheres of material production and culture.

Here is a brief chronicle of the Soviet five-year plans.

The First Five-Year Plan (1929-32), adopted in May 1929, was fulfilled ahead of time in 4 years and 3 months.

As a result of its fulfilment the U.S.S.R. was turned from an agrarian into an industrial country.

The share of industrial output in the total volume of industrial and agricultural produce equalled 70 per cent.



The following are just a few of the many enterprises and projects of major significance built during the first five-year plan period: the Stalingrad Tractor Plant, the Dnieper Hydro-Power Station, the Magnitogorsk Metallurgical Works, the Urals Heavy Machinery Plant, the Turksib Railway, the Rostov Agricultural Machinery Plant, the Saratov Harvester Plant, the Moscow and Gorky Automobile Works, the textile mills in Central Asia.

The key problem of the First Five-Year Plan was the development of heavy industry with its backbone—machine-building. This period witnessed the creation of new and the almost total reconstruction of the existing industries: automobile, machine-tool, tractor, aircraft, chemical, etc. Machine-building output increased 4.4 times.

There was a sharp change in the Soviet Union's standing in world industrial output (see graph).

The rapid growth of industry during the first five-year plan period created material conditions for bringing about radical social changes in agriculture. By the time the plan was nearing fulfilment over 60 per cent of the individual peasant farms had already united into collective farms.

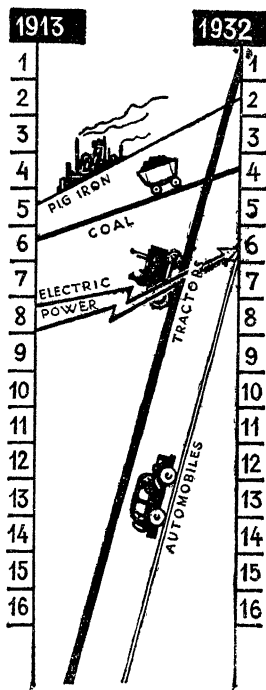
The Second Five-Year Plan (1933-37) was adopted in 1934. It aimed at completing the reconstruction of the national economy on socialist lines on the basis of modern technique. By the end of the five-year period the building of a socialist society was, in the main, completed, the exploiting classes were liquidated, and collectivization of agriculture was accomplished. As far as industry went, the plan was fulfilled ahead of time—in 4 years and 3 months.

Industrial output grew more than four times as against 1929.

In 1937, over 80 per cent of the total industrial output was already produced by the newly-built or totally reconstructed plants.

The Third Five-Year Plan (1938-42) was adopted in 1939. The chief items were: machine-building, production of high-quality steel, and the chemical industry.

Before the beginning of the Great Patriotic War the monthly industrial output in the U.S.S.R. almost reached the annual output in tsarist Russia.

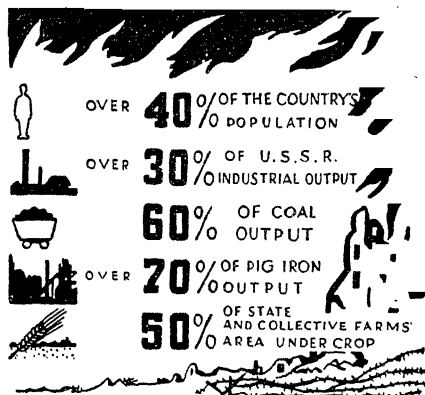


The war, into which the Soviet Union was drawn by fascist Germany, prevented the successful fulfilment of the plan since the entire national economy was placed on a war footing.

The Fourth Five-Year Plan (1946-50) was adopted in March 1946. It was the first stage in post-war economic development of the Soviet Union. The principal targets were to restore the pre-war level in industry and agriculture and then exceed it considerably.

The primary task was to rebuild the regions occupied and devastated by the enemy.

The pre-war data on these regions:



The Nazis were convinced that by destroying the economy of the regions they had occupied they were turning the rich Soviet land into barren waste for decades to come.

It took the Soviet people less than a decade to heal the war scars. In the course of the Fourth Five-Year Plan, the pre-war level in gross industrial output was not only reached but even exceeded by 73 per cent (in 1950).

During the years 1946-50, six thousand two hundred major industrial enterprises were restored, or built anew and commissioned.

Once again the Donets Basin and the Moscow Coal-field began to supply the country with coal, the resurrected Dnieper Hydro-Power Station produced electric power, and hundreds of new plants grew up.

The Fifth Five-Year Plan (1951-55), adopted in 1952, provided for a further rise in all branches of national economy and in the welfare of the people. In total volume of industrial output the plan was fulfilled ahead of time—in 4 years and 4 months. By 1955 gross industrial output surpassed the 1950 level by 85 per cent and was 3.2 times the pre-war level.

The 1955 output as compared to 1913 was increased:
27 times in total industrial production

60 times in production of means of production

11 " " production of consumer goods

87 " " electric power generation

over 160 times in machine-building and metal-working industry.

During the fifth five-year period important state measures were carried out to increase output of grain and animal produce. Vast tracts of virgin and disused land were put under the plough (33 million hectares in all). The 1955 grain crop area exceeded the 1950 area by approximately 24,000,000 hectares.

The 20th Congress of the Communist Party (1956) approved the directives for the *Sixth Five-Year Plan* which were already being put through with success. In 1956 the annual increase of total industrial output was almost 11 per cent, and in 1957 it was approximately 10 per cent.

The organization of industry and construction management on the territorial principle called for radical changes in the accepted order of long-term planning. Moreover, the discovery and investigation of new reserves of different raw materials and sources of energy enabled the building of new enterprises and industrial centres unprovided for by the Sixth Five-Year Plan. The three remaining years were insufficient for the accomplishing of these projects, the time needed being from five to seven years. In view of this a seven-year plan (1959-65) has been elaborated.

This plan is a component part of the long-term fifteen-year plan. The principal target of the seven-year plan is the accelerated development of the national economy with a view to creating a material and technical basis of communism, and winning time in the peaceful economic competition between socialism and capitalism.

During the forthcoming seven-year period the Soviet national economy and its backbone, heavy industry, in particular, will go on developing at rates many times higher than those characteristic of the economies of capitalist countries.

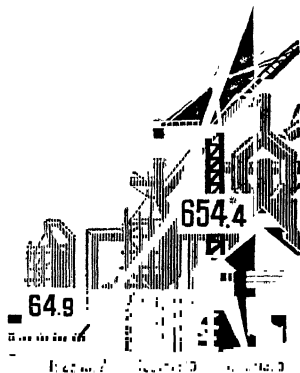
At the same time, the growth of agricultural output aimed at will greatly increase the country's resources in agricultural raw materials to provide the population with a wide-range supply of high-quality foodstuffs and to meet the requirements of the country in agricultural produce.

State investments will be 1.8 times greater during 1959-65

INVESTMENTS IN THE NATIONAL ECONOMY

(000 million rubles)

1940-1970

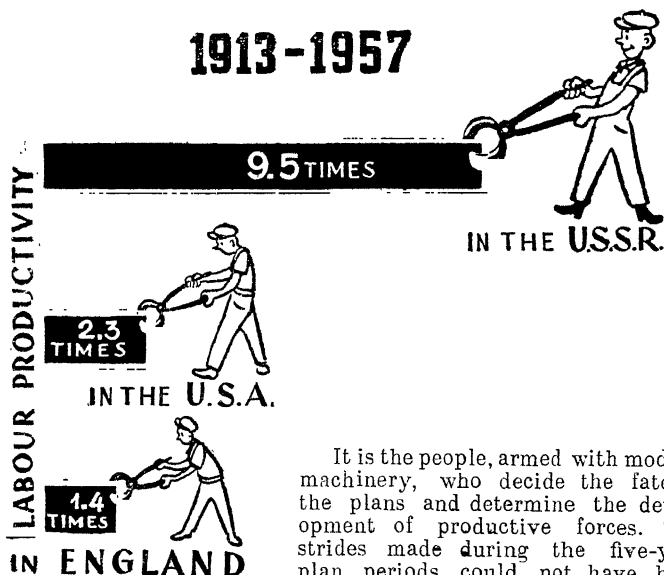


than in the preceding seven-year period (investments in industry will be approximately doubled), and will almost equal the total capital invested in national economy since the establishment of Soviet power.

Parallel to the five, seven and other long-term plans, current annual plans are also elaborated and adopted. Socialist planning is based on the combination of long-term plans, which determine the main course of economic development for a number of years, and current plans which set down a concrete programme of work to be done over shorter periods.

Short-term and long-term planning is, in fact, a purposeful concentration of the society's manpower and resources for the development of productive forces.

GROWTH OF LABOUR PRODUCTIVITY IN INDUSTRY

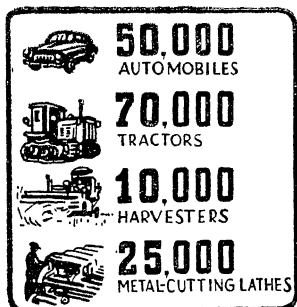
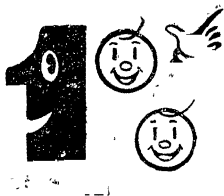


It is the people, armed with modern machinery, who decide the fate of the plans and determine the development of productive forces. The strides made during the five-year plan periods could not have been achieved without a steady and rapid growth of labour productivity.

Labour productivity, said Lenin, was, in the final analysis, the most important thing for the victory of socialism.

As compared with 1913, labour productivity in agriculture has grown 3.8 times.

A mere one per cent rise in labour productivity in the rolling-mill industry would give extra rolled metal to make:



In labour productivity the U.S.S.R. has outstripped the most economically-developed capitalist countries in Europe; the gap between productivity of labour in pre-revolutionary Russia and in the U.S.A. has been considerably shortened.

In the course of 1959-65 labour productivity per worker engaged in industry is expected to increase by 45-50 per cent, in construction—60-65 per cent, in rail transport—34-37 per cent, in state farms—60-65 per cent, and in collective farms approximately 100 per cent. In 1965, the growth of labour productivity will account for 75 per cent of the increase in industrial output.

The socialist system facilitates a practically unlimited growth of labour productivity. The premises for this are:

On the one hand:

freedom from exploitation; a new attitude to work as to a matter of honour and heroism; material and moral encouragement; progress in science, promotion of general and special education, and a higher production efficiency.

On the other:

reorganization of production into a large-scale modern machine industry; continuous development and perfection of machinery and methods; large-scale specialization, co-operation, and the introduction of other advanced organizational methods.

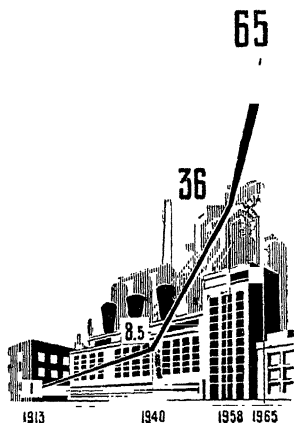
These two prerequisites for an unlimited growth of labour productivity in a socialist country are inseparably linked together.

Technical progress is the unexcelled means of raising labour productivity. But technical progress can only be ensured by a *priority development of heavy industry* and its backbone, machine-building, supplying all branches of national economy with up-to-date machinery.

The 1958 total industrial output was 36-fold the pre-revolutionary level, and the production of the means of production grew 83-fold.

The socialist system of economy has secured unheard-of rates of increase in industrial output, which no capitalist country can attain.

GROSS INDUSTRIAL OUTPUT
(1913=1)



In the last 40 years (1918-57) industrial output increased annually (on an average)

U.S.S.R.	10.1%
U.S.A.	3.2%
England	1.9%
France	3.2%

The U.S.S.R. ranks *first* in Europe and *second* in the world for volume of output in the following main branches of industry: machinery, electric power, coal, iron ore, pig iron, steel and cement.

Gross industrial output in 1965 will be about 80 per cent greater than in 1958. In group "A"—output of the means of production—the increase will amount to 85-88 per cent. In 1959-65 the average annual increase in gross output in industry as a whole will approximate 8.6 per cent; and in group "A"—it will be 9.3 per cent.

Within the next seven years, the annual increase in industrial output will total about 135,000 million rubles, as compared to 90,000 million rubles in the preceding seven years.

The high rates of growth of labour productivity and a substantial increase in industrial and agricultural output made it possible even before the war to advance as the *chief economic aim of the U.S.S.R.* the overtaking and surpassing of the leading capitalist countries in per capita production.

This is the main economic index by which to judge of the level of productive forces' development. A socialist society cannot, of course, stop at the level attained by the leading capitalist countries in per capita production.

"When we win in this economic competition with the U.S.A.," said N. S. Khrushchov in his speech at the 21st Congress of the Communist Party, "we shall only have completed the initial phase of communist construction. The economic level reached in this phase will not be the end of our road but only a midway station at which we shall overtake capitalism's most developed country, leave it behind and push ahead."

The chief economic target affords a clear view of the next milestone in the competition between socialism and capitalism.

Had it not been for the war which put off the achievement of the chief economic aim, the Soviet Union would already have caught up with the U.S.A. in per capita production. The technical progress made in the U.S.S.R. has rendered the aim more concrete and tangible. Per capita production has been increased 23-fold in the period of 1913-57. Achievement of the chief economic aim in the shortest time is guaranteed by the unprecedented rate of development and productivity of labour. In the field of industry, it will take about 12 years.

DISTRIBUTION

The socialist principle of distributing material wealth according to labour agrees with the socialist system of economy and the socialist ownership of the means of production. It means that each member of society receives his share from the common funds in accordance with the quality and quantity of work put in.

Consistent application of this principle gives the workers a material incentive, prompts them to perfect their skill and strive for higher showings in their work. These are indispensable conditions for a rapid and steady growth of labour productivity, which will in due course afford transition to the communist principle of distribution: to each according to his needs.

Socialism emphatically rejects the petty-bourgeois ideal of equality, which means a levelling in consumption, living conditions, etc. The level to which production has so far been developed is not yet high enough to supply everyone with sufficient material wealth to satisfy his needs fully. The word equality in a socialist state according to Marxists means that all members of the society have equal right to work, are equally duty-bound to work according to their abilities, and are equally liable to the law of distribution according to labour.

Every year the working people create various material and spiritual values, the sum total of which is the social product. After reimbursing the cost of implements and means of production used in the process of production, each worker is paid his share out of the *national income* remaining at the disposal of society.

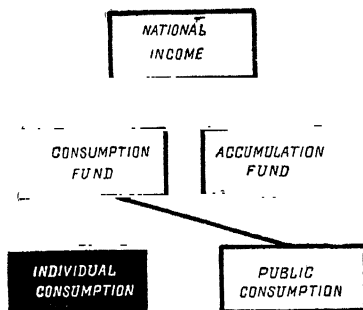
However, further development of production has to be ensured first and a reserve built up. In the U.S.S.R. this takes about a quarter of the national income.

The remainder is assigned to the individual and public consumption of the working people.

Individual consumption means wages, collective farmers' workday payments, and incomes of handicraftsmen and others.

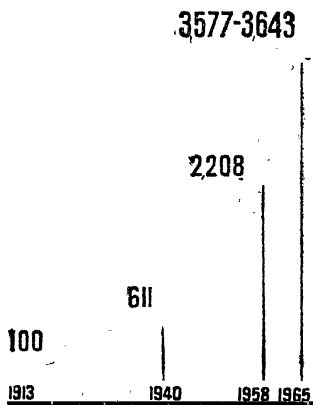
Individual welfare promotion, however, is not limited to the payment of higher wages. There are also the social funds, the role and importance of which is continuously growing. The state's social service expenses increase with every year. In 1958, for instance, the state allocated over 215,000 million rubles for social insurance,

DISTRIBUTION OF THE NATIONAL INCOME IN THE U.S.S.R.



grants, pensions, student grants, free education, free medical service, payment of vacations, maintenance of boarding-schools, kindergartens, crèches, sanatoriums, rest homes, homes for the aged and other allowances. These expenditures are expected to reach 360,000 million rubles in 1965, which will benefit each worker by about 3,800 rubles a year.

SOVIET NATIONAL REVENUE (1913 = 100)



The socialist system of economy ensures unheard-of rates in the growth of national income.

The U.S.S.R. is ahead of all the capitalist countries in the rate of growth of the national income.

In the ten years from 1945 to 1955, the national income of the U.S.S.R. showed an average annual increase of 12.8 per cent. In 1957 it exceeded the 1913 level more than twenty-fold, and fourteen-fold per capita. In 1958 the per capita increase was fifteen-fold the 1913 level.

The U.S.A. national income increased 3.2 times in the period 1913-57, while the per capita increase was less than doubled. In England and France per capita increase was only 1.7 times.

The 1958 level will be exceeded by 62-65 per cent in the seven-year period. No capitalist country in the

world has ever known such high rates of growth of national income. The volume of consumption, will become greater by 60-63 per cent seven years hence.

The U.S.S.R. State Budget, approved for the year by the Supreme Soviet, is the agency re-distributing national income. The State Budget is the country's financial plan, showing where the money comes from and where it goes.

The chief source of revenue is the profit made in socialist economy. The revenue for 1959 is estimated at 655,300 million rubles, while the 1958 figure was 570,300 million rubles. Income tax collected from the population will make a total of 56,000 million rubles in 1959, or 7.8 per cent of the revenue.

The working people of the Soviet Union pay into the State Budget incomparably less than they draw from it in the form of pensions, grants, allowances and benefits.

The U.S.S.R. State Budget funds are intended for: socialist reproduction on an expanded scale, fulfilment of a broad programme of public and cultural construction, national defence, accumulation of state material reserves and reserve funds.

The bulk of the revenue is expended on financing the growing socialist national economy and on social insurance, public health,

education, cultural facilities, sports, etc. The top item in the budgets of capitalist countries is armament.

THE U.S.S.R. STATE BUDGET EXPENDITURES FOR 1958

National economy—257,100 m. rubles, or about 41 % of total expenditure

Social and cultural enterprises . .	212,800	"	"	or 34%	"
National defence	96,300	"	"	" 15%	"
State administration	11,900	"	"	" less than 2%	"

CLASSES

The old Russian society presented a picture of flagrant class inequality. On the one hand, there were the smug and the powerful, rolling in luxury. They were the minority. On the other, there were the underfed, hard-driven and work-worn men, denied all civil rights. They were the majority.

Inequality was actually sanctioned by the law. The people were divided into the following higher and lower class estates of society:

1. Nobility.
2. Clergy.
3. Merchants.
4. Petty bourgeois (urban handicraftsmen, shopkeepers).
5. Peasants.

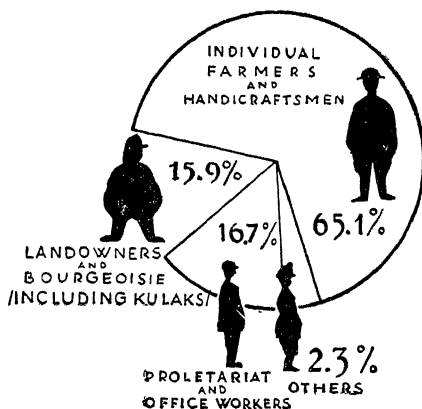
The last three class estates were liable to government taxes and military service.

The October Socialist Revolution destroyed the economic basis for the existence of landlords and capitalists as a class.

The decree, issued on November 23rd, 1917, by the All-Russian Central Executive Committee and the Council of People's Commissars and signed by V. I. Lenin, abolished the division into higher and lower class estates. There were no longer any "excellencies" or "highnesses"—from then on, the new proletarian law recognized only "citizens of the Russian Soviet Republic."

To the peasants the Revolution gave land and political freedom. How-

CLASS DIVISION IN TSARIST RUSSIA



THE CLASS STRUCTURE OF SOVIET SOCIETY



The proletariat was no longer a class deprived of civil rights and destined to live in poverty. It became the ruling class, owner of the social wealth jointly with the peasantry and the working intelligentsia. The working class quickly grew in number as a result of the industrialization of the country. Its vanguard—workers engaged in heavy industry—increased particularly.

In 1913, the majority of workers were engaged in the light and food industries, the former employing 31.67 per cent and the latter 20.5 per cent of all workers in Russia, while machine-building and metal-working employed a mere 14.42 per cent.

The number of industrial and office workers is envisaged to grow by 12,000,000 people, or 22 per cent, in the next seven years.

ever, the conflict of social inequality remained acute in the rural districts between the poor and middle peasants on the one side and the kulaks on the other. Peasantry as a whole was still a petty-bourgeois class. Collectivization brought the work of socialist transformation of the village started in October 1917 to a successful end. Large collective farms, equipped with modern machinery, appeared in place of the small, individually owned farms. The kulaks were eliminated as a class. There were no longer any poor or middle peasants. A new class came into being, the class of collective-farm peasantry.

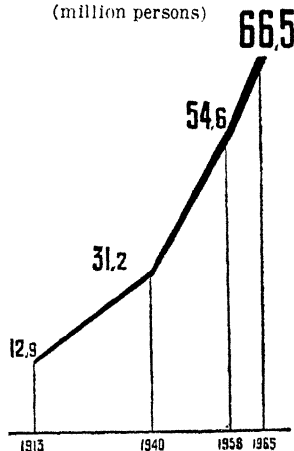
For the first time in the history of mankind a society was formed where there were no exploiters or exploited.

Soviet society is made up of two friendly classes—the workers and peasants, and a social group—the working intelligentsia.

It was not just the class structure that underwent a change, the classes themselves were radically changed.

EMPLOYMENT IN THE NATIONAL ECONOMY

(million persons)



The working class has changed not only quantitatively but also qualitatively. Today the overwhelming majority of workers are educated people with a good general and political knowledge, skilled in the most complex processes of modern production, and able to make efficient use of the most up-to-date machinery.

The state has set up a system of educational establishments—Labour Reserves—for training skilled workers. During the period 1940-57 over nine million young workers graduated from the numerous Labour Reserves schools. Of this number, 686,000 graduated in 1957.

The state allocates about 2,000 million rubles a year on the training of workers and on courses for improving their skill.

Boys and girls studying in Labour Reserves schools are offered a range of 500 different trades and professions to choose for their own.

Since 1954, the system of Labour Reserves has included technical schools where graduates of secondary schools are trained for technicians or junior technical workers.

Polytechnical education, which is being introduced in compliance with decisions adopted by the 20th Party Congress, will enable graduates of secondary schools to master the fundamentals of technical science and to get some practical knowledge of one or several trades.

A good number of workers are studying at evening general and technical secondary schools, attending different classes, or are taking correspondence courses at higher educational establishments.

Almost the entire staff of workmen at the Kuibyshev Locomotive Plant in Kolomenskoye is studying.

A good half of the workers at the Magnitogorsk Metallurgical Works is engaged in study.

Every second worker at the Tbilisi Silk Mill is a student.

Most of the workers in the main shops of the Likhachov Automobile Works in Moscow have a complete secondary-school education.

Branches of technical schools and institutes have been established at the mills and factories: an evening department of the Automobile Engineering Technical School and Automobile Engineering Institute has been opened at the Likhachov Automobile Works; similarly, an evening branch of the Polytechnical Institute has been opened at the Leningrad Metal Works, and of the Urals Polytechnical Institute at the Urals Heavy Machinery Plant.

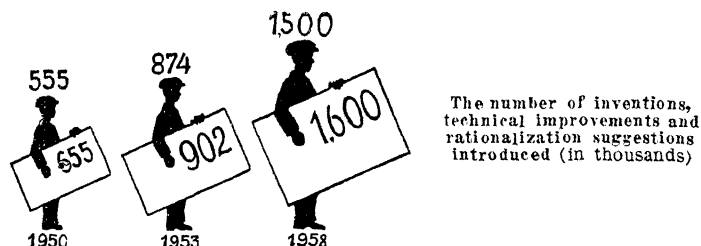
Over thirty-five million rationalization suggestions have been registered in the years of Soviet power, including some 218,000 inventions.

In 1957, inventors and rationalizers numbering approximately 1,500,000 made over 2,000,000 suggestions, of which more than 1,500,000 have been introduced in the national economy. Roughly this made a saving of 7,000 million rubles a year.

The growth of the working class in percentage of the total population, the growth of its political activity and cultural and professional standards, enhanced its leading role in the unbreakable union of workers and peasants.

The collective-farm peasantry is a class of socialist workers in agriculture who, jointly with the working class and intelligentsia, own the social wealth of the country.

The number of inventors and rationalizers
in industry, construction and transport
(in thousands)



The composition of the rural population has undergone a radical change with the introduction of new labour conditions in the collective farms.

The backwardness and ignorance of the old Russian village population are things of the past.

NUMBER OF TECHNICAL SPECIALISTS WITH HIGHER
OR SECONDARY EDUCATION IN RURAL DISTRICTS
(in thousands)

	1941	1953	1957
At collective farms and machine and tractor stations	29	83	278
At state farms and state auxiliary agricultural enterprises	20	31	93
Total	49	114	371
Including agricultural specialists (agronomists, live-stock experts, veterinary workers and foresters) in thousands:			
At collective farms and machine and tractor stations:	19	69	211
At state farms and state auxiliary agricultural enterprises	16	27	70
Total	35	96	281

In 1958, approximately 500,000 specialists with higher or secondary education were engaged in agriculture.

The psychology of the peasant has also undergone a radical change—he is now a collectivist, an active participant in the building of communism.

The *intelligentsia* does not form a class since it has no standing of its own in social production: its knowledge and ability is at the service of the people.

The *intelligentsia* of tsarist Russia in the main served the ruling classes, aiding them to multiply their wealth and to consolidate their power. The Revolution broke the *intelligentsia* into two camps: some fought against the Revolution, others allied themselves with the Revolution and the working people, and joined the ranks of people building a new life. Many of the old intellectuals found it difficult and painful to accept the Revolution at once and they only arrived at the right decision after much vacillation. The ideals of communism and the romance of building a new life, which inspired the whole country, won them over.

The progressive-minded Russian *intelligentsia*, who considered themselves in destiny bound to their Motherland, accepted and recognized the Soviets as a progressive power, and dedicated all their abilities to the cause of socialism. This was the road chosen by such outstanding men in Russian science as Timiryazev, Pavlov, Tsiolkovsky, Michurin, Karpinsky, and many others.

But this group of scientists and intellectuals, who joined the ranks of the Soviet people in the first years following the Revolution, was very small. In order to achieve the stupendous task of building socialism it was essential to create a new, working *intelligentsia*, to bring up a great army of scientists, engineers, doctors, teachers, writers, artists and actors. And an *intelligentsia* such as this has been created from among the workers and peasants, it has been brought up in the communist spirit and has contributed splendidly to the building of a new society.

According to 1956 data, the *intelligentsia* in the U.S.S.R. numbered 15,460,000 people, engaged as follows:

	(in thousands)
Managers of enterprises, construction projects, state farms, collective farms, machine and tractor stations, and all departments and branches of enterprises, institutions and organizations	2,240
Engineers and technicians	2,570
Agronomists, live-stock breeders, veterinary surgeons and experts in organization of land exploitation	376
Workers in science	231
Teachers	2,080
Educational, cultural and art workers	572
Physicians	329
Public health personnel	1,047
Planning-and-economics and book-keeping personnel . .	2,161
Legal workers	67
Students of higher school (exclusive of evening and correspondence course students)	1,178
Other groups	2,609

In the U.S.S.R. intellectual work is no longer the privilege of a chosen few; every year more people from the working class and collective-farm peasantry join the ranks of the intelligentsia; engagement in intellectual work affords no particular advantages over engagement in physical work: the intelligentsia is just a group of highly skilled working people; the incompatibility of interests of mental and manual workers has been eliminated: the intelligentsia, the working class and the peasantry have one common aim—the building of communism.

THE STATE IS OURSELVES

Socialism owes its existence to the masses, and is the result of their heroic labour and political activity. The principal task of the Soviet state is to stimulate and direct the creative initiative of the working people. Fulfilment of this task implies the creation and development of a new and higher form of democracy—socialist democracy.

State power in the U.S.S.R. is exercised by the most advanced class—the working class.

Although ruling the society, the working class enjoys no political privileges. Its rule implies that the state is guided by its party and that society is developing in conformity with its ideology. The Communist Party, which is the party of the working class, and Marxism-Leninism, which is the ideology of the working class, uphold and express the interests of the whole society, for all the working people are equally interested in building a communist society.

Soviet state power is a political form of dictatorship of the working class—the chief instrument in building socialism and communism.

SOVIETS

The Soviets of Working People's Deputies, organs of the people's power, are the sole and permanent foundation of the whole state machinery. All the other government bodies are formed by the Soviets by whom they are empowered and controlled.

The Soviets are the most all-embracing organizations of the working people.

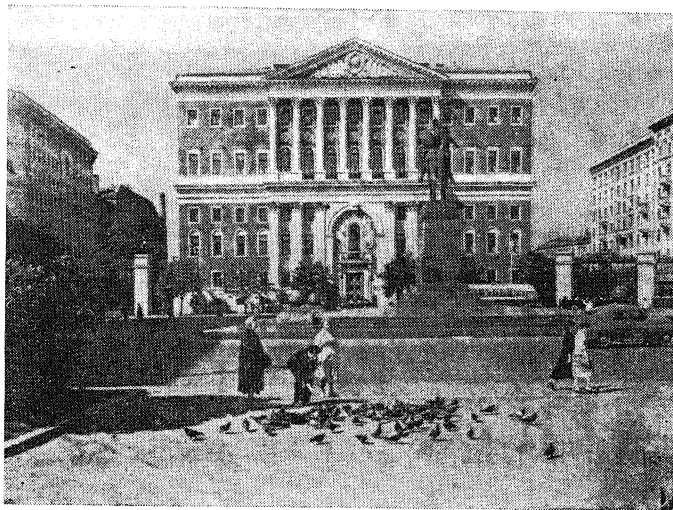
They embrace the whole country and form a harmonious integral system of state organs from the lowest to the highest.

Relations between the Soviets of different levels are based on Lenin's principle of democratic centralism, which ensures both a centralized management of the state and the utmost development of local initiative.

The essence of the principle of democratic centralism is a maximum of democracy combined with a maximum of organization and discipline.

The Soviets are the most mass organizations of the working people. Deputies numbering 1,549,777 were elected to the local Soviets in 1957.

According to 1956 data over 1,000,000 deputies and 1,500,000 activists were working on the permanent committees of local Soviets.



Moscow City Soviet

Deputies are elected from all sections of the population. For instance, among the 853 deputies elected to the Moscow City Soviet in 1957 there were:

- 346 workers
- 88 managers of enterprises and institutions
- 157 Party, Soviet and trade-union workers
- 65 scientists
- 44 engineers and technicians
- 26 teachers
- 31 physicians and public health workers
- 12 art workers

The number included 377 women.

The Moscow City Duma in 1912-16 was made up of 146 members, including: 63 industrial capitalists, 32 merchants, 24 real estate owners, 27 lawyers, stockbrokers and other members of free professions.

The Soviets are the most representative organizations of the working people.

Soviet suffrage and electoral system are truly democratic. The aim is to give the fullest possible representation of the people's interests in the organs of state power.

Elections of deputies are *universal*: all citizens of the U.S.S.R. who have reached the age of 18, irrespective of social origin, race or nationality, sex, religion, education, domicile, property status or past activities (with the exception of insane persons) have the right to vote.

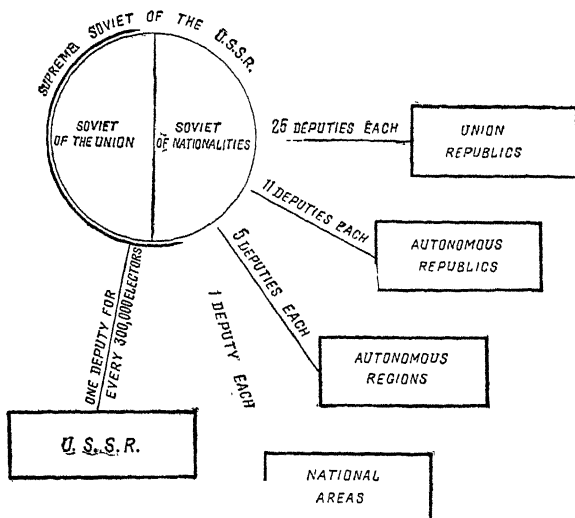
Every citizen of the U.S.S.R. who has reached the age of 18 is eligible for election to the local Soviets, 21 to the Supreme Soviets of Union and Autonomous republics, and 23 to the Supreme Soviet of the U.S.S.R.

In addition to the balloting stations set up in the places of residence or work, people are enabled to give their vote wherever they happen to be on the day of election: in hospitals, maternity homes, long-distance trains, on board ship, in the Arctic and the Antarctic.

Thus, the percentage of electors abstaining from voting is insignificant. In the 1958 elections to the Supreme Soviet of the U.S.S.R., for instance, a total of 99.97 per cent voters participated.

Elections of deputies in the U.S.S.R. are *equal*: each citizen is entitled to one vote. Electoral districts are established on an equal basis: one election district for every 300,000 of the population to vote for the Soviet of the Union, 25 equal election districts in each Soviet Republic to vote for the Soviet of Nationalities, 11 in each Autonomous Republic, 5 in each Autonomous Region, and one in each National Area.

ELECTIONS TO THE SUPREME SOVIET OF THE U. S. S. R.



Elections in the U.S.S.R. are *direct*: all Soviets of Working People's Deputies are elected by the citizens by direct vote.

Voting at elections of deputies is *secret*. Voting papers are not numbered, balloting booths are provided where every voter may fill in his paper which he then personally drops into the ballot-box. Special election committees, composed of representatives of public organizations, see that all these rules are observed.

The working people's supervision and control over their deputy does not cease at the moment of election but, rather, dates from it. The deputy is a servant of the people, and is dependent on his electors during the whole course of his activity.

Candidates are nominated by Party, trade-union, Y.C.L. and other public organizations of the working people; prior study and comprehensive discussion of nominees ensures selection of the worthiest; election campaigns are treated as matters of state importance and, usually, from 12,000,000 to 15,000,000 activists help to put them through.

Deputies to the Soviets and persons in other elective offices are accountable in their work to their electors.

Electors may recall their deputy from office at any time should he forfeit the confidence reposed in him or fail to put their mandate into effect.

Deputies may not make a profession of their elective office, each deputy must continue with the work in which he is ordinarily engaged and not divorce himself from his electors who may at any time express to him their opinion of his public activities. Deputies—be they workers, collective farmers or scientists—only leave their occupations to attend the sessions of Soviets. Once the session is over they go back to their everyday jobs.

The Soviets are working organs of state power, because they not only pass decisions but actually carry them into effect.

The main form of the Soviets' activity is the holding of sessions or regularly convened general meetings of the deputies, vested with the power to decide all questions within the given Soviet's competency. The delegates of the sessions exercise their right to discuss and decide problems of state, to verify the work of the executive and administrative organs of state power and give them instructions. Decisions adopted by the sessions of Soviets assume the validity of directions to be followed by the executive organs and the entire population inhabiting the territory of the given Soviet.

In the intervals between sessions, the work is carried out by permanent commissions, the executive committee and the deputies.

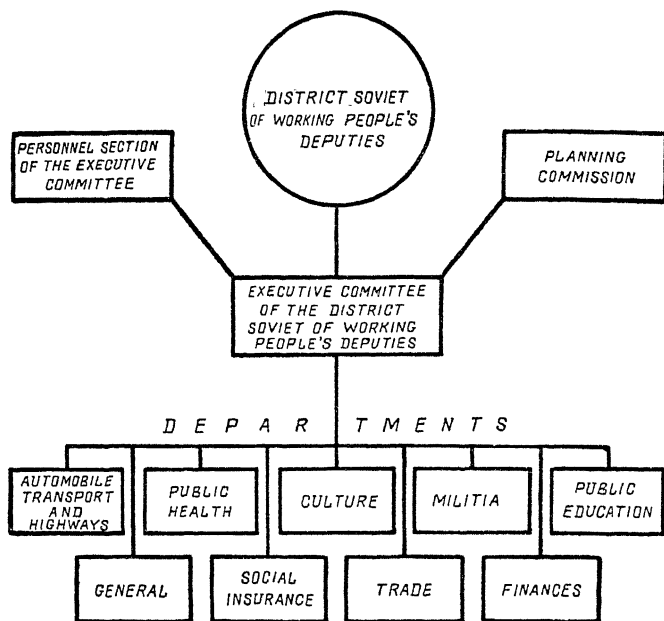
The Soviets are ruling organs because they not only discuss and decide questions of policy but also manage all society's possessions on behalf of the people.

Each Soviet manages the enterprises and material values within its territory, with the exception of enterprises of a Republican or Union significance.

The decisions adopted by district Soviets on a number of questions (public services, tree-planting, sanitation, public order, etc.) are binding for all enterprises and organizations situated in that district irrespective of their departmental appurtenance. As Soviet democracy develops and the rights of Union republics and local organs of power are extended, district Soviets become empowered with the management of an ever-increasing number of enterprises.

The 1957 reorganization of industry management was of particular significance in this respect. Supreme Soviets and governments of Union republics received the right to manage almost all the main

DISTRICT ORGANS OF STATE POWER AND STATE ADMINISTRATION



branches of industry located in their republics. Republican budgets which made 24.5 per cent of the U.S.S.R. budget in 1956, equalled 49.7 per cent in 1958. A number of industrial enterprises, formerly appertaining to ministries, have been made subordinate to the republics and their local Soviets. Today republican and local Soviets are actually exercising control over many branches of national economy providing for the population's essential needs.

The highest organ of state power in the U.S.S.R. is the *Supreme soviet of the U. S. S. R.*

The legislative power of the U.S.S.R. is exercised exclusively by the Supreme Soviet of the U.S.S.R. All rules and regulations established by other state organs must be based on the laws of the U.S.S.R. The Supreme Soviet is empowered to exercise control over the observance of the Constitution of the U.S.S.R.

The higher organs of state power are formed directly by the Supreme Soviet of the U.S.S.R. The Supreme Soviet elects the Presidium of the Supreme Soviet, i.e., the collegiate President of the Soviet Union, and forms the Council of Ministers, i.e., the Government of the U.S.S.R.

The Supreme Soviet of the U.S.S.R. elects the Supreme Court of the U.S.S.R. and appoints the Procurator-General of the U.S.S.R.

All these organs are responsible and accountable to the Supreme Soviet of the U.S.S.R.

The Council of Ministers of the U.S.S.R. has the following high duties entrusted to it: management of national economy, direction of cultural development, maintenance of public order, protection of the interests of the state, safeguarding of the rights of citizens, fixing of the annual contingent of citizens to be called up for military service, direction of the general organization of the Armed Forces of the U.S.S.R., and the exercising of general guidance in the sphere of relations with foreign states.

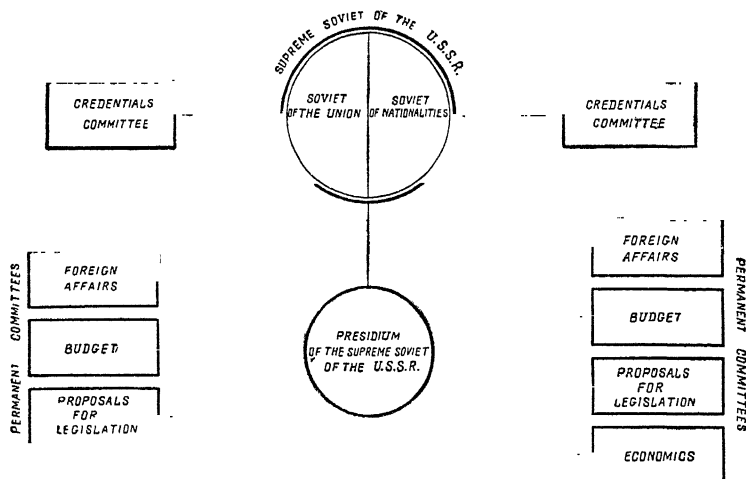
In national-economy management, the Council of Ministers of the U.S.S.R. adopts measures to carry out the national-economic plans and the State Budget of the U.S.S.R., to strengthen the credit and monetary system, etc.

The Council of Ministers of the U.S.S.R. issues decisions and orders on the basis and in pursuance of the laws in operation, and verifies their execution.

Deputies to the Supreme Soviet take part in meetings, in discussions of laws and decisions, and work on the following committees: Legislative Proposals, Budget, Foreign Affairs and Economics. The work of the parliamentary group of the U.S.S.R. has acquired great significance.

Every deputy of the Supreme Soviet has the right to address questions to the Government or any one of the Ministers concerning their work. The Government or the Minister to whom the question has been put must give a reply to it in the respective Chamber within a period not exceeding three days.

STRUCTURE OF THE SUPREME SOVIET OF THE U.S.S.R.



The Supreme Soviet of the U.S.S.R. consists of two Chambers:
The Soviet of the Union, representing the interests common to all the citizens of the U.S.S.R. irrespective of nationality.

The Soviet of Nationalities, representing the interests specific to different peoples and nations inhabiting the U.S.S.R.

The two Chambers of the Supreme Soviet of the U.S.S.R. have equal rights:

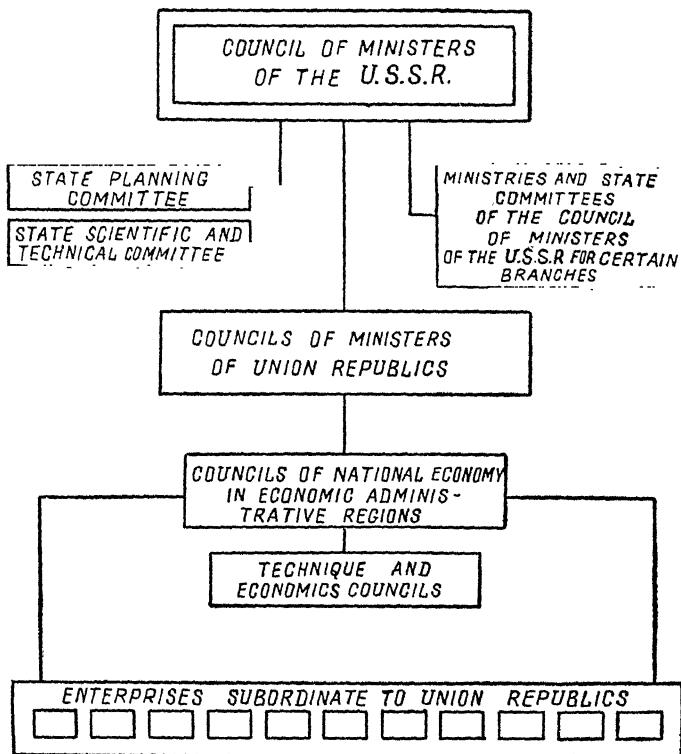
They have equal powers to initiate legislation.

They are elected for equal terms.

Their sessions begin and terminate simultaneously.

A law is considered adopted if passed by both Chambers, either by each Chamber separately or at a joint sitting where each Chamber votes separately.

STRUCTURE OF UNION-REPUBLICAN INDUSTRY MANAGEMENT





A View of the Moscow Kremlin

COMPOSITION OF THE SUPREME SOVIET OF THE U.S.S.R. (Elected in 1958)

Soviet of the Union—738 deputies:

Deputies representing workers and peasants number 465 (63 per cent); of whom 327 (44.3 per cent) are engaged in production.

The remainder are representatives of the working intelligentsia.

Among the deputies there are: 34 managers of enterprises and specialists, 22 managers of scientific research institutions, 82 workers in science, culture, literature and arts, 113 engineers, 55 agronomists, live-stock experts and other agricultural specialists, 10 economists, 22 physicians, 35 teachers, 13 members of the Academy of Sciences, 27 doctors of science, 24 candidates of science.









Soviet of Nationalities—640 deputies:

Deputies representing workers and peasants number 366 (57.2 per cent); of whom 287 (44.9 per cent) are engaged in production.

Among the deputies to the Soviet of Nationalities there are 77 workers in science, culture, literature and arts, including 9 academicians, 16 managers and workers of research institutions, 17 teachers and 11 physicians (see table on next page for comparison).

Deputies to the Soviet of the Union number 421 Russians, 153 Ukrainians, 29 Byelorussians, 19 Uzbeks, 15 Kazakhs, 9 Georgians, 11 Azerbaijanians, 9 Lithuanians, 4 Moldavians, 5 Letts, 4 Kirghiz, 6 Tajiks, 7 Armenians, 5 Turkmen, 4 Estonians, and 37 deputies of 23 other nationalities.

THE COMPOSITION OF THE THIRD STATE DUMA

	LANDLORDS 202	OFFICIALS 29	
	SMALL LANDOWNERS AND KULAKS 65	LAWYERS 30	
	CHURCH 47	WORKMEN AND HANDICRAFTSMEN 11	
	MERCHANTS AND INDUSTRIALISTS 32	OTHERS 37	

Deputies to the Soviet of Nationalities represent 58 nationalities and peoples of the Soviet Union. Among them there are 147 Russians, 39 Ukrainians, 26 Byelorussians, 29 Uzbeks, 20 Kazakhs, 36 Georgians, 32 Azerbaijanians, 20 Lithuanians, 16 Moldavians, 22 Letts, 15 Kirghiz, 22 Tajiks, 29 Armenians, 20 Turkmen and 22 Estonians.

The nationalities of Autonomous republics are represented by: 7 Abkhazians 4 Bashkirs, 8 Buryats, 9 representatives of Daghestan (Avars, Darghins, Kumyks, Lakhs, Lezghins and Tsakhurs), 5 Kabardinians, 2 Balkars, 5 Karakalpaks, 4 Karelians, 8 Komi, 4 Mari, 5 Mordvinians, 11 Ossets, 11 Tatars, 5 Udmurts, 4 Chechens, 2 Ingushes, 8 Chuvashes, 8 Yakuts.

Among the deputies to the Supreme Soviet of the U.S.S.R. there are 1,175 persons awarded Orders and medals of the U.S.S.R.

Among the deputies to the Soviet of the Union 563 are members and candidate members of the Communist Party of the Soviet Union, and 175 are non-Party people.

Among the deputies to the Soviet of Nationalities 485 are members and candidate members of the Communist Party of the Soviet Union, and 155 are non-Party people.

A total of 366 women have been elected to the Supreme Soviet of the U.S.S.R.—190 to the Soviet of the Union (or 25.7 per cent), and 176 to the Soviet of Nationalities (or 27.5 per cent).

AGE COMPOSITION OF THE SUPREME SOVIET DEPUTIES

	Under 30	31-40	41-50	Over 50
Soviet of the Union	45 6.1%	132 17.9%	318 43.1%	243 32.9%
Soviet of Nationalities	61 9.5%	168 26.2%	241 37.7%	170 26.6%

NEW FORMS OF DEMOCRACY

In present-day conditions, when socialism has triumphed in the U.S.S.R. and the country has entered upon an important new phase in its development—that of the extensive building of a communist society,—the Soviets are assigned to play an immeasurably greater role than heretofore. The Supreme Soviets of Union republics have considerably increased (by about 350,000 people) the number of deputies to local Soviets at the elections held in March 1959 with a view to improving the work of the Soviets, strengthening their ties with the masses, furthering the development of Soviet democracy and drawing the working people more extensively into the practical work of the Soviets.

The development of Soviet democracy does not stop at these measures, however. Life itself has already advanced the necessity of transferring certain functions, now exercised by organs of state power, to public organizations, which will form the basis for the withdrawing away of the state in the Marxist sense of the word. One of the points under discussion is the transfer of certain functions connected with cultural facilities to the public organizations. The problem of a more efficiently organized physical culture movement has actually been solved. The Union of Voluntary Sports Societies has taken over the duties of the State Committee for Physical Culture and Sport. Public organizations will assume more and more responsibility for public health on a local scale, for maintenance of public order and observance of the socialist community rules. Soviet statistics record no cases of political crimes committed in the U.S.S.R. today. As for cases of lawbreaking, Soviet public organizations will fight them together with the militia, the people's courts and procurators' offices, and eventually replace these state judicial organs altogether.

Parallel with the reduction of militia and State Security personnel, numerous voluntary public order squads are already being formed from among the citizens to uproot hooliganism and instil in the population the practice of observing the community rules of a socialist society. Gradually, as the people themselves grow accustomed to maintaining law and order, more duties, presently carried out by state organs, will be transferred to the public organizations.

In the process of development, socialist democracy advances new forms of mass participation in state management.

"...We have a 'magic means' of enlarging our state apparatus *tenfold* at once, at one stroke, a means which no capitalist state ever possessed nor could possess. This magic means is to draw the working people ... into the daily work of state administration." (V. I. Lenin.)

In the U.S.S.R. criticism and self-criticism have become "laws of life." Criticism is just a method of revealing shortcomings and mistakes in the work of public and state bodies and separate individuals. The value of criticism lies not only in its ability to refute, but first and foremost in its positive content—the constructive proposals it brings forth. Not criticism per se, but criticism with a view to correction and development—such is the gist of criticism in the socialist meaning of the word.

Criticism is a revolutionary method of rejecting all that is outdated, harmful, and obstructive to society's progress, a method of seeking and establishing new, progressive forms of development. Criticism penetrates the entire activity of public organizations, organs of state power and collectives of workers in every field of industry, science and culture.

Self-criticism is the higher form of criticism, an evidence of the high level of consciousness attained by people brought up in a socialist society.

Criticism, and especially criticism from below, has become a practice in the life of the Soviet society. It is a weapon which is widely used in speeches made at Party, trade-union, Y.C.L. and production meetings; in critical articles published in the newspapers and magazines; in the letters to the press sent in by the working people, etc.

The ordinary book of complaints, found in all the shops and public-service establishments, is another means of improving the services rendered to the working people. Comments are not exclusively derogatory; expressions of gratitude for good service and business-like suggestions are not infrequent. Incidentally, the book is officially called a "Book of Complaints and Suggestions."

Affairs of state are decided by the working people at production and other meetings.

The practice of holding production conferences at enterprises and offices is a form of ensuring the workers' constant participation in the management of the given enterprise.

On an average, the daily number of suggestions made at production conferences held in the country is about 35,000. Over 25,000 suggestions are introduced a day.

How best to utilize machinery? How to avoid time losses which are beyond the workers' control? How to be thriftiest with raw materials? How to regulate the rates of output and wages? How to perfect safety arrangements and labour protection?

These and similar problems are best settled if all the workers concerned put their heads together, and this is facilitated by the production conferences.

Meetings of the best workers and specialists in different branches of national economy are held on a Union scale either in Moscow or elsewhere to discuss development programmes for the next few years.

The active members of the socialist society form a truly great army of Soviet citizens who contribute to the good of the state and at the same time gain experience, knowledge, and attain a higher level of culture and consciousness.

Laws are studied and discussed by the people. In recent years it has become a set practice with the Soviet Government to give all the more important draft laws a nation-wide discussion.

This is an absolutely new form of mass legislation. Outwardly it resembles a referendum, but in fact it greatly differs from it. In the case of a referendum, every citizen is usually required to give one answer to the question asked: yes or no. In the U.S.S.R. when a nation-wide discussion of a draft law is held, people need not just state

their final decision but may also put forward their suggestions, amendments and addenda, in other words participate in the making of a law in the true sense of the word.

After a nation-wide discussion, which took several months, the following laws were adopted by the Supreme Soviet of the U.S.S.R.:

State Pension Law (1956).

The Legislative Proposals Commissions of the two Chambers of the Supreme Soviet of the U.S.S.R. studied over 12,000 letters received from the population and took into account many amendments to the State Pension Law suggested.

The Law of Further Promoting Reorganization of Management in Industry and Construction (1957).

A total of 514,000 meetings with an attendance of approximately 41,000,000 were held to discuss the theses of N. S. Khrushchov's report on the reorganization of industry management. Comments and suggestions were made by 2,300,000 people. Sixty-nine thousand letters and articles were printed in the press and broadcasted.

The Law on the Further Development of Collective-Farm System and Reorganization of the Machine and Tractor Stations (1958).

Approximately 577,000 meetings were held to discuss the theses of N. S. Khrushchov's report at the first session of the Fifth Supreme Soviet of the U.S.S.R. The meetings were attended by approximately 50,000,000. Comments and suggestions were advanced by over 3,000,000 people. Letters and articles numbering 126,000 were printed in the press and broadcasted.

In the course of discussion of the theses of N.S. Khrushchov's report "On the Control Figures for the Economic Development of the U.S.S.R. 1959-65" about a million meetings were held all over the country at factories, construction sites, state and collective farms, scientific-research institutes and educational establishments, organs of state administration and Army, Navy and Air Force units. Attendance totalled over 70,000,000. Comments and suggestions were made by 4,672,000 people. In addition, over 650,000 letters and articles containing suggestions and comments on the theses were sent in to the central and local Party and Soviet bodies, to the newspapers, magazines, radio and television.

Today, over 208,000,000 Soviet citizens can confidently say: *the State is ourselves.*

JUSTICE

Themis, the ancient goddess of Justice, has a bandage over her eyes, implying that she was impassively weighing the evidence of guilt and innocence. Soviet justice is not blindfolded: it studies and weighs the pros and cons impartially, yet it sees before it not simply a lawbreaker but an individual with a complex life story of his own. Soviet justice strives to



unravel the causes that have brought the man to the dock, and help him back to the life of honest labour. The people's court is humane towards criminals by misadventure, but stern in its punishment of persons who are a menace to the socialist order.

The Soviet judicial system is called upon to safeguard from all and any encroachment:

the state and social system of the U.S.S.R. consolidated in the Constitution of the U.S.S.R. and the Constitutions of Union and Autonomous republics;

the socialist system of economy and socialist property;

the political, labour, and other personal and property rights and interests of the citizens of the U.S.S.R. guaranteed by the Constitution of the U.S.S.R. and the Constitutions of Union and Autonomous republics;

the rights and interests of state enterprises, establishments, collective farms, co-operatives and other public organizations.

The Soviet judicial system ensures a strict observance of the law by all the institutions, organizations, officials and citizens of the U.S.S.R.

Judgement by the people—such is the principle of socialist justice. The organization of the Soviet judicial system is based on the principle of democracy.



The Soviet court is collegiate. Cases are tried with the participation of people's assessors. Each member of the court—the judge or the assessor—has one vote. The basic Soviet judicial organ is the people's court which tries and passes judgement on 95 per cent of all the cases in the country. People's courts are elected by the citizens of the respective districts by direct vote and secret ballot.

Every citizen of the U.S.S.R. in possession of electoral rights who has reached the age of 25 is eligible for election to the people's court as judge or people's assessor.

On December 15th, 1957, 4,600 people's judges and 334,931 people's assessors were elected in the R.S.F.S.R.

The Composition of People's Judges

R. S.F.S.R.

2,942 men	or	64%
1,658 women	"	36%

The Composition of People's Assessors

186,030 men	or	55.5%
148,901 women		44.5%

Classified According to Education:

People's Judges:

2,472 persons	or	53.7%	with a higher legal education
1,754	"	38.1%	with a secondary legal education
218	"	4.8%	graduates of law courses

People's Assessors:

2,297	persons with a higher education
94,431	" " " secondary "
217,543	" " " an elementary education

People's Assessors Classified According to Occupation:

107,239	or 32%	workers in industry
68,427	" 20.4%	collective farmers
143,941	" 43%	office workers
15,324	" 4.6%	students, pensioners, housewives, etc.

Only persons who have a moral right to exercise justice are elected to Soviet courts.

Judicial proceedings are conducted in the language of the Union republic, Autonomous republic or Autonomous region concerned. Persons who do not know the language are guaranteed the right to acquaint themselves with the material of the case through an interpreter and likewise the right to use their own language in court.

In Union republics, the majority of people's judges elected belong to the aboriginal nationalities. In the Azerbaijan S.S.R. 84 per cent of the people's judges are Azerbaijanians, in the Georgian S.S.R. 93 per cent are Georgians, in the Uzbek S.S.R. over 85 per cent are Uzbeks, and in the Estonian S.S.R. 86 per cent are Estonians.

Cases are heard in public. Every citizen of the U.S.S.R. has the right to be present at the hearing of criminal or civil cases, and the press the right to report on the proceedings.

The publicity of the court proceedings teaches the people to respect the Soviet laws and at the same time places the activity of the court under their supervision.

Not infrequently cases are heard at mills, factories and collective farms to enable a maximum attendance of citizens interested in the outcome of the given case.

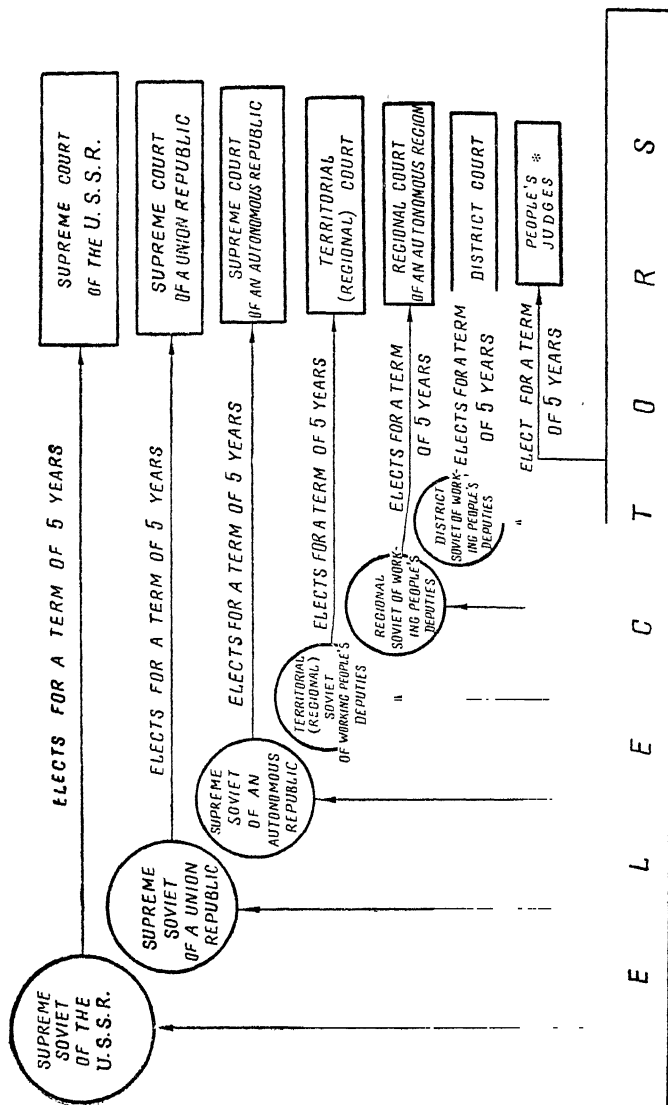
The accused is guaranteed the right of defence. The bar has been instituted in the Soviet Union. Representatives of public organizations are also empowered to act as defence lawyers in court.

Counsel is provided free where the accused is unable to afford the services of a lawyer. Soviet law has an inviolable rule that no innocent persons should be tried or convicted.

Judges are independent and subject only to the law. The right to recall a judge or people's assessor rests exclusively with his electors. A people's judge may be prosecuted only on the orders of the Procurator of the Republic and with the consent of the Presidium of the Supreme Soviet of the Republic. The law also provides a series of other guarantees.

Cases may be appealed to the higher courts for judicial re-examination of all verdicts and decision of any lower court (with the exception of verdicts and decisions passed by the Supreme Courts of the Union

THE SYSTEM OF ELECTING THE SOVIET COURTS



* People's assessors are elected at general meetings of factory, office and collective-farm workers at their places of work and habitation, and of servicemen in their respective units, for a term of two years.

republics and the Supreme Court of the U.S.S.R.). If the verdict or decision is found inconsistent with the material of the case or a law is found to have been violated, the higher court annuls the verdict or decision and submits the case for re-examination.

The October Socialist Revolution abolished the laws of the capitalist society and established new Soviet laws. Strict observance and implementation of these laws is a necessary condition for the successful building of a communist society.

The procurator's offices of the U.S.S.R. are charged with the protection of the socialist law, and are vested with supervisory powers to ensure correct implementation and strict observance of the law by all the institutions, organizations, officials, and citizens of the U.S.S.R.

"...to see that the law is really uniformly interpreted all over the Republic, notwithstanding differences in local conditions, and in spite of all local influences" was the way V. I. Lenin understood the duties of Soviet procurator's offices.

The procurator's offices protect the socialist order from hostile intrusion, persecute anyone who encroaches upon the rights of Soviet citizens, supervise observance of Soviet laws by all citizens and institutions, including judicial bodies, direct the investigation of criminal cases, and participate in the work of the court, acting on behalf of the state.

The Soviet procurator's offices are as closely linked with the masses as Soviet people's courts.

ON GUARD OF PEACEFUL LABOUR

The Soviet Republic was born for peaceful labour; predatory wars are alien to a state where the people are in power. Significantly, the first decree of the Soviet Government was the Decree on Peace. However, from the very first days the Soviet Republic was forced to take up arms.

The world's imperialists could not reconcile themselves to the victory of the proletarian revolution in Russia and launched an armed intervention against the young Soviet Republic, imposing a civil war on it.

"We could not exist without an armed defence of the socialist revolution" (V. I. Lenin).

In answer to the call of the Communist Party and the Soviet Government "Socialist Motherland Is in Danger," the working class formed the Red Army.

The young detachments of the new army—the army of the people who made a revolution—repulsed the German invaders at Pskov and Narva in February 1918. February 23rd is the birthday of the Soviet Army and Navy. It has become a traditional Soviet holiday.

The Armed Forces of the U.S.S.R. have travelled a long and glorious road of struggle and triumph. They valiantly fought for the liberty and independence of their Soviet Motherland.

During the years of foreign intervention and civil war the Red Army with the active support of the people defeated the hordes of

interventionists and whiteguards, and defended the historical achievements of the October Revolution.

Heedful of Lenin's behest to be always on guard, the Soviet people did not relax their efforts to strengthen the national defence while peaceful construction was going on.

On June 22, 1941, Hitler's Germany treacherously attacked the Soviet Union. Germany and her satellites sent 190 divisions against the U.S.S.R.

The Soviet Army withstood the main war-blow, defeated the German crack troops in hard defence battle, and launched a triumphant advance on all fronts, helping to liberate peoples in Europe from the fascist yoke. The Soviet Army also played a decisive role in the defeat of Japan, fascist Germany's ally.

The Soviet Army's victories on the approaches to Moscow, Kursk, Leningrad, in Stalingrad, on the Dnieper and Niemen, in Warsaw, Budapest, Berlin, Prague, Manchuria and Korea will live through the ages.

Being the army of a socialist state, the Soviet Army has certain distinctive features from which stem its strength and invincibility.

It is the army of the people, for it is made up of representatives of the working class, peasantry and intelligentsia and defends the interests of the whole people.

Contradictions between the officers and men do not exist in the Soviet Army. The same world outlook is shared by all, they have common interests and aims and this unites them into a single whole.

Singleness of purpose and a conscious approach to the common duty of defending their Motherland make for strong military discipline. A commander's order is law to the Soviet soldier not merely because it is so decreed by the regulations, but also because it agrees with the dictates of his conscience and his patriotism.

The valour of the fighters in the Second World War has been appreciated and rewarded by the Party, the Government, and the whole Soviet people.

Orders and medals of the U.S.S.R. have been awarded to over 7,000,000 servicemen. The title of Hero of the Soviet Union has been conferred on 11,000 soldiers and officers, among them 1,142 tankmen, 1,853 artillery men, 513 sailors, 48 anti-aircraft men, 206 cavalymen, 539 engineers, 138 signallers, 27 men of railway troops and on 2,119 pilots, navigators and gunners, 63 of whom were awarded the title twice, and two pilots—A. I. Pokryshkin and I. N. Kozhedub—thrice.

The Soviet Army is an integral part of the Soviet people, on whom it may always rely for loyalty and support.

Victory in the Great Patriotic War was achieved through the great unity that linked the fighting army and the home-front together. The whole country lived and worked for victory. The strides made in Soviet industry and the heroic labour of the workers and peasants at the home-front kept the army supplied with planes, tanks, guns, ammunition, etc., as well as with provisions in growing quantities.

Types of Weapons	Annual production		
	Pre-revolutionary Russia 1914 to 1917	U.S.S.R. in the last three years of war	Fascist Germany 1941 to 1944
Tanks, self-propelled artillery, armoured cars . . .	Practically none	Over 30,000	15,400
Aircraft	Practically none	Up to 40,000	19,700
Guns of all calibres	Approx. 3,900	Up to 120,000	28,500
Mortars	6,200	Up to 100,000	16,700
Shells, bombs, mines . . .	Approx. 16,300,000	Over 240,000,000	166,700,000

A patriotic movement was launched throughout the country for collection of funds for national defence. During the war years the people loaned the Government over 100,000 million rubles, of which approximately 13,000 million rubles were contributed during 1941-43.

The Soviet people to a man rose up in arms to fight the fascist aggressors.

There was no word more fearful for the Germans than partisans. Yekaterina Pankova, an aged peasant woman, Marija Melnikaite, a young Lithuanian girl, Konstantin Zaslonov, a Byelorussian engineer, the Ignatov brothers of Krasnodar, and thousands of other ordinary Soviet people immortalized their names and brought glory to their Motherland with their heroic deeds.

The Soviet Army is an army of brotherhood and friendship among nations. Men of different nationalities peopling the U.S.S.R heroically fought in serried ranks at the approaches to their common capital—Moscow, the cradle of the proletarian revolution—Leningrad, in Stalingrad, city of legendary fame, on the approaches to the Transcaucasian republics, in the Ukraine, Byelorussia, Moldavia and the Baltic republics.

Kayum Rakhmanov, an Uzbek, fought for Leningrad and died the death of a hero. A note was found on him, which said: "Life means Motherland. Motherland means my family, my village, the whole of my Soviet land. When the enemy takes an inch of my Soviet land, he cuts out a piece of my flesh. I felt the Ferghana valley shake when the fascists attacked the Soviet Union. And every man in whom the honest heart of an Uzbek was beating, said to himself: 'Go forward, stop the enemy, defend your home, your family.' And so I came to Leningrad. There can be no free Uzbekistan without Moscow, without Leningrad, without Soviet Russia."

War heroes upon whom orders and medals have been conferred



"Memorial to the Soviet Soldier," Berlin

represent 193 nationalities and national groups. Among the 11,000 soldiers, awarded the title of Hero of Soviet Union, there are 7,627 Russians, 1,928 Ukrainians, 244 Byelorussians, 157 Tatars, 99 Jews, 97 Kazakhs, 88 Armenians, 81 Georgians, 66 Uzbeks, 40 Azerbaijanians, 37 Bashkirs, 16 Turkmens, 15 Tajiks, and soldiers of other nationalities.

The Soviet Army is brought up in the spirit of proletarian internationalism. The Armed Forces of the U.S.S.R. have never fought to seize the lands of others or to enslave other peoples. The just wars which the Soviet Army has been compelled to fight have always been supported by the working people of other countries.

During the Second World War, Soviet soldiers, brought up in the spirit of respect for other nations, performed many deeds of heroism in liberating peoples in Europe and Asia from fascist tyranny.

"You gave us life, we gave you love..." is carved on the granite base of a monument erected in Zamberk, a small Czechoslovakian town, to the Soviet warriors who fell in battle for its liberation. The names of the heroes are carved below.

An imposing monument has been erected in the centre of a large park in Berlin after the Second World War. A Soviet soldier is holding a sword in one hand and a little girl he has saved on his other arm. An inscription in German says: "Soviet warriors have freed us from fascism, and we shall never forget it. Glory to the U.S.S.R."

Monuments as well as renamed streets and squares, villages and towns in all parts of the globe are lasting memorials to Soviet soldiers who brought liberation to peoples at the cost of their own lives so that light could triumph over darkness, and progress over reaction.

The guidance of the Communist Party is the Soviet Army's chief source of strength and invincibility. The Party has formed the Armed Forces of the Soviet Union and brought them up in the spirit of patriotism, internationalism, and a high sense of duty.

When the Soviet Army and Navy were first being formed, it was the Communists who cemented the ranks, instilled noble communist ideals in the men, and led them in battle for the revolution.

The country owes the training and moral education of its able commanders and army leaders to the Communist Party.

Envoys of the Party—military commissars, political workers and army Communists—played a leading role in building up the Soviet Armed Forces. "Without the military commissars we would not have had a Red Army," was Lenin's definition of the importance of Bolshevik military commissars during foreign intervention and the Civil War.

The Soviet people revere the memory of Dmitry Furmanov, the wonderful Bolshevik commissar and fearless soldier of the Revolution, who was a fellow-fighter of the famous Vasily Chapayev and mentor of his glorious regiments. Dmitry Furmanov was one of the many political workers who helped to bring up the soldiers of the Soviet Army in a spirit of selfless devotion to the people and to the cause of communism.

The Communist Party and the Soviet Government make it their responsibility and concern to keep the Soviet Armed Forces fully equipped for national defence. The Soviet Army today is in possession of every type of modern weapon and military equipment, including nuclear weapons, multiform rocket equipment, short-range, middle-range and long-range, capable of delivering the charge to any point on the globe.

The Armed Forces of the U.S.S.R. stand vigilant guard over the peaceful labour of the Soviet people. They threaten no one, but they are always in readiness to repel any aggressor with a shattering blow

THE COMMUNIST PARTY

History has known many political parties. There were not a few in old Russia as well. However, the only party to win the confidence and devotion of millions of working people was the Communist Party, the militant union of people holding the same views, selflessly struggling for the happiness of mankind.

The Communist Party is a revolutionary Marxist party of a new type, champion of the interests of the most advanced class—the working class—and the interests of the working people as a whole. The Party was born and moulded in the class battles of the proletariat.

The whole history of the Communist Party, founded at the Second Congress of the Russian Social-Democratic Labour Party in 1903, is inseparably linked with the name of Lenin, its great leader and founder. Lenin creatively developed the theory of Marxism in conformity with the new conditions of the epoch of imperialism and proletarian revolutions, and armed the Party with this theoretical weapon. Lenin's ideas became the fundamental principles of the Party's organizational structure and all its practical activity.

The Party travelled a long and difficult road in the fifty-odd years of its existence, a road attended with much success as well as cases of failure and error. The Party, however, never swerved from the principles of Leninism, and owes all its victories to this loyalty.

The Communist Party was the force that remodelled society. It raised high the banner of the struggle for the emancipation of the working class and all the working people of Russia from the bonds of tsarist autocracy and capitalism, and carried this banner through three revolutions. Led by the Communist Party, the working class in unity with the toiling peasantry won a victory and established Soviet power in the memorable year of 1917, which opened a new era in the history of mankind—the era of socialism. Under the guidance of the Party, the working people of Russia defeated all the internal and external enemies of the revolution, raised the country from the ashes, developed the national economy and culture on an unheard-of scale and at an unheard-of speed, and built a socialist society. The Party inspired the Soviet people to victory in the Great Patriotic War, and is now confidently directing the creative efforts of the two-hundred-million people towards the building of a communist society.

THE ONE-PARTY SYSTEM

History provides the answer to the question why a one-party system has come to prevail in the U.S.S.R.

The February bourgeois-democratic revolution provided all the political parties of Russia with an opportunity to practically show how they proposed fulfilling the principal demands of the people. The policy of the bourgeois party of Constitutional-Democrats which came to power, as well as the Mensheviks and the Socialist-Revolutionaries who later joined them, very soon showed that they were least concerned with upholding the interests of the working people, securing peace for them, granting them land or freeing them from exploitation. At a moment when the revolution was endangered by the insurrection started by Kornilov, a tsarist general, to reinstate monarchy, the Communists alone remained loyal to the cause. It was they who organized the masses for suppression of the insurrection, and the masses, losing confidence in the bourgeois parties, followed the Communists.

The Communist Party became the ruling party in October 1917, but even then it was not the only one in the country. The party of Left-wing Socialist-Revolutionaries remained active and was represented in the first Soviet Government. This party, however, soon revealed its animosity to the interests of the working people, and sealed its own fate by embarking on counter-revolutionary plotting.

Forty years have elapsed. Today, even the foes of socialism, to say nothing of the friends, have to admit that the Soviet people, led by the Communist Party, have achieved remarkable successes. The excellence of this guidance is evidenced by the great socialist state that has grown up in place of the poverty-stricken tsarist Russia, a state that ranks second in the world in economic might, and is ahead of all the capitalist countries in the rates of economic growth.

Once socialist society was built in the U.S.S.R. the class basis on which other political parties could be formed was naturally eliminated. There are no exploiting classes in Soviet society. It is composed of two friendly classes—the workers and the peasants—and a social group—the working intelligentsia. All the strata of Soviet society have common interests and pursue one common aim—the building of communism. It is therefore quite natural that there should be only one party, the Communist Party, which upholds these interests and which the people look to as their tried and tested political leader.

A Soviet worker, a non-Party man, attending a meeting of workers in Milan gave the following answer when asked why there was just one party in the U.S.S.R.

"There were many parties in tsarist Russia, but that didn't make life any easier for the working people. We have just one party now, but it's a truly people's party, it upholds the interests of the workers and is leading us to communism. We'll weather all storms with our Party, and with it leading us we are afraid of nothing."

THE VANGUARD

The Constitution of the U.S.S.R. assigns the role of leadership to the Communist Party.

"The most active and politically-conscious citizens in the ranks of the working class, working peasants and working intelligentsia voluntarily unite in the Communist Party of the Soviet Union, which is the vanguard of the working people in their struggle to build communist society, and is the leading core of all organizations of the working people, both public and state." (The Constitution of the U.S.S.R., Art. 126).

A good helmsman steers his ship on a set course in any weather, through storm and gale. Likewise, the Communist Party steers the Soviet state ship.

A helmsman must have a compass in order not to deviate from his course. The revolutionary theory of Marxism-Leninism serves as the Party's compass. The theory is omnipotent because it correctly sets out society's requirements in the development of its material and spiritual life. Giving no ready-made dogmas or prescriptions for each and every situation and occasion, the theory calls for a creative, concretely-historical approach to life's phenomena. Using the teaching of Marxism-Leninism for guidance in all its activity, and creatively developing the theory to conform to the new conditions, the Party attains a clearness of purpose, confidence in victory, and an ability to orient itself in any situation and to blaze new trails in history.

The wise and flexible forms of the Party's organization enable it to settle the great problems advanced by life itself, and cope with the problems connected with building a communist society.

The Party's basic organizational principle of *democratic centralism* ensures a correct combination of centralized guidance with a maximum development of creative initiative and independent activity of the rank-and-file Communists. Adherence to this principle is of paramount importance for the preservation of unity in the Party. The Communist Party, whose members are welded together by unity of Party programme, tactics and discipline, invariably displayed its monolithic strength at every sharp bend in the course of history, and routed every attempt at factionalism.

Combination of centralized and *collective* leadership is a basic feature of the organizational structure of the Party.

The co-ordinated joint work of the delegates to the Party Congress, which is the highest organ of the Communist Party, and of all the members of the Central Committee (Plenary Session of the Central Committee) in the intervals between congresses, enables the Party to adopt the right decisions on the main problems of communist construction, and find the best ways of their realization.

These decisions are then discussed at Party members' meetings and in the Party press. All Communists therefore actually take part in elaborating and approving the programme before they begin to consciously put it into effect.

The entire activity of the Communist Party is conducted in an

atmosphere of sound, unbiased *criticism* and *self-criticism*. The Party, being the political leader of the most advanced class, openly discusses its shortcomings and errors. History has proved that fear of criticism and self-criticism is an inherent trait of the moribund classes and their political parties. As for the Communist Party, which is guided by Marxism-Leninism, the most revolutionary and, essentially, the most critical theory, it boldly discloses any shortcomings in its work and directs the creative energy of the Communists to their elimination.

The Party's intolerance of shortcomings was evidenced by the high-principled Bolshevik criticism to which the 20th Congress of the C.P.S.U. subjected the cult of the individual, by the struggle waged to eliminate the consequences of the cult, and by a further expansion and consolidation of socialist democracy. Once the shortcomings in the organization of the national economy were disclosed, the Communist Party of the Soviet Union and its Central Committee took the initiative in submitting new proposals of vital importance for a further development of the country's production forces, such as: ensuring a steep rise in agriculture; the reorganization of management in industry and construction; the reorganization of machine and tractor stations and the sale of agricultural machinery to the collective farms; the introduction of new forms of planning; extension of the rights of the Union republics and local Soviets; enhancing of the role of the trade unions; accelerated development of the chemical industry, and in particular production of synthetic materials and articles made thereof to satisfy the demands of the population, etc.

THE PARTY AND THE PEOPLE ARE ONE

When the Central Committee of the Communist Party announced the plan of developing over thirty million hectares of virgin land, the sceptics called it utopian. Indeed, the plan would sound fantastic to those who either cannot or do not wish to realize that the policy of the Communist Party is to champion the interests of the people and solve the country's pressing problems. It is therefore unanimously supported by the masses and an idea, once taken up by the masses, becomes a great material force that knows no obstacles.

The strength of the Communist Party lies in its indestructible bonds with the masses, in its ability to lead the masses and to learn from them.

This unity engenders the inviolable mutual trust and solidarity which make the Party and the people it leads invincible and permit the posing and solving of stupendous problems.

Every Soviet citizen, worker, collective farmer or intellectual, whether he is a Party member or not, invariably turns to his Party organization for advice, explanation or help in matters concerning both his work and his private life. He does it because of his boundless confidence in the Party. This faith has been well expressed by Vladimir Mayakovsky, the great Soviet poet.

*The Party
alone
will never betray me...*

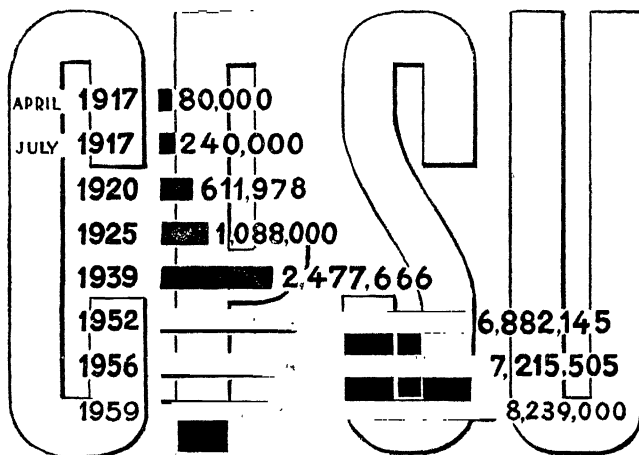
Nor will the people ever betray their Party, or withhold their support when the Party turns to them in all difficult and crucial moments.

In 1942, when the enemy had broken through to Moscow, the city's Party organization appealed to the Muscovites to form workers' and communist detachments and defend the capital at all costs. Within a few days over 120,000 Muscovites had joined up the people's Volunteer Corps, with another 24,000 enrolling in the anti-aircraft detachments. Moscow and Moscow Region dispatched over 100,000 Communists and 260,000 members of the Y.C.L. to the fighting lines.

In the post-war years, thousands and thousands of Communists and non-Party people, in response to the Party's call, left their homes and jobs and set out to work on the development of the virgin lands, in the coal-mines of Donbas, or at the great construction projects in Siberia and the Far East.

The solidarity of the Party and the people grows and strengthens. The best representatives of the working people join the ranks of the Communists. It is not self-interest or glory that moves them, but an urge to fight in their ranks for the triumph of communism.

Communist Party membership grew as follows:



THE LEADER OF THE WORLD COMMUNIST MOVEMENT

The Communist Party of the Soviet Union, first in history, to put the lofty ideals of socialism into practice, contributed greatly to the experience of the international communist movement. Communists of countries building socialism base their creative work on the experience of the C.P.S.U., and Communists in capitalist countries use it in their struggle for the working people's

rights. At the same time the experience gained by the Communist Party of the Soviet Union is further enriched by new contributions made to the history of the world communist movement by Communist and Workers' parties in other countries.

This is one of the manifestations of proletarian internationalism, the basis on which the relations of the Communist and Workers' parties of different countries are built.

The Communist Party of the Soviet Union maintains close relations with Communist and Workers' parties abroad based on strictly voluntary lines, on equality, friendly criticism and an amicable exchange of opinions on disputable questions. Mutual exchange of delegations is one of many forms of maintaining such relations. Delegates of 72 fraternal Communist and Workers' parties were invited to attend the 21st Congress of the Communist Party of the Soviet Union in 1959. In its turn representatives of the Communist Party of the Soviet Union attend congresses of Communist and Workers' parties abroad, and state holiday celebrations in socialist countries.

Meetings of representatives of Communist and Workers' parties, practised lately, have become an important form of exchanging experience and opinions on matters concerning the development of the international labour movement and the strengthening of international solidarity. The meeting of representatives of Communist and Workers' parties of socialist countries, held in Moscow in November 1957, corroborated once again these parties' unity of views on the fundamental questions of the socialist revolution and construction of socialism.

Well aware of the historical responsibility they have to bear for the destiny of the international labour movement, Communist and Workers' parties are striving to unite the working class of the world, and therefore they vote for co-operation with Socialist parties. They believe that ideological differences of opinion existing between the Communists and the Socialists should not be a stumbling block in establishing unified action on many issues arising at this stage of development in the labour movement.

Strengthening the unity of the Communist and Workers' parties and ruthlessly combating all and every attempt at revising the theory of Marxism-Leninism, which is the basis of this solidarity, continue to be the primary conditions for uniting the working class as well as the best guarantee that its cause will triumph.

At the Moscow Meeting held in November 1957, Comrade Mao Tse-tung, expressing the thoughts and sentiments of all the Communists, said that the socialist camp and the world communist movement cannot develop successfully without their centre, and their leader; that history has placed the great Soviet Union at the head of the socialist camp, and the Communist Party of the Soviet Union at the head of the international communist and working-class movement.

The Party of the immortal Lenin in fraternal alliance with other Communist and Workers' parties is the vanguard of progressive mankind in the struggle for peace, democracy and socialism.

THE GOVERNING BODIES OF THE COMMUNIST PARTY OF THE SOVIET UNION

The Presidium of the Central Committee of the C.P.S.U.:

A. B. Aristov, N. I. Belyaev, L. I. Brezhnev, K. Y. Voroshilov, N. G. Ignatov, A. I. Kirichenko, F. R. Kozlov, O. V. Kuusinen, A. I. Mikoyan, N. A. Mukhitdinov, M. A. Suslov, Y. A. Furtseva, N. S. Khrushchov, N. M. Shvernik.

Candidate Members of the Presidium:

P. N. Pospelov, D. S. Korotchenko, J. E. Kalnberzin, A. P. Kirilenko, A. N. Kosygin, K. T. Mazurov, V. P. Mzhavanadze, M. G. Perukhin, N. V. Podgorny, D. S. Polyansky.

The Secretariat of the Central Committee of the C.P.S.U.:

First Secretary: N. S. Khrushchov.

Secretaries: A. B. Aristov, L. I. Brezhnev, N. G. Ignatov, A. I. Kirichenko, O. V. Kuusinen, N. A. Mukhitdinov, P. N. Pospelov, M. A. Suslov and Y. A. Furtseva.

SOVIET TRADE UNIONS

The working people of the U.S.S.R. led by the Communist Party are fighting a noble battle for communism. They are united in serried ranks by the Soviet Trade Union, which is the biggest public organization of the working people with a membership of approximately 53,000,000 workers in factories, offices and other establishments.

The working class, which comprises the majority of the members, is the master of the socialist state and is mainly responsible for organizing the country's life, and therefore the importance of the role played by the trade unions in the U.S.S.R. is self-evident. For the first time in history, trade unions do not have to limit their activities to the protection of workers' rights, but are empowered to participate in industry and state management.

The art of administrating industry and being a good manager generally is not inborn and can only be mastered with experience. It is up to the trade unions to help the working people gain the necessary experience; they achieve this by training millions of Soviet workers in elementary organizational practices, developing their cultural and political awareness, and drawing them into industry management. Soviet trade unions are an educational organization, an organization to attract and teach, that is, a school of administration, a school of economic leadership, a school of communism.

In order to take part in industry management, a person does not necessarily have to hold an administrative post or be on the managerial staff. In the Soviet Union every ordinary worker in industry may be actually instrumental in stepping up production, correcting mistakes and shortcomings, perfecting supervision and control, introducing new machinery and perfecting technological processes.

Different forms of ensuring the workers' participation in industry

management have been conceived and practised in the course of constructing socialism, but the universally acclaimed form is socialist emulation, for every worker involved is stimulated to strive for higher labour productivity and a general upswing of the given industry as a whole. Socialist emulation, organized and directed by the trade unions, is a reliable method of building communist society.

The working class, with its creative initiative and political activity, started the practice of holding production conferences as long ago as the 1920's. The conferences, guided in their work by the trade-union organizations, have with the years become a method of drawing the masses into production management. The role attached to production conferences has been particularly enhanced since, by resolution of the December, 1957, Plenary Session of the Central Committee of the Communist Party, they have become a standing institution, embracing as many as 7,000,000 industrial, professional and office workers elected to these bodies.

Matters discussed at the conferences include the production plans of the given enterprise, organization of production and labour processes, ways and means to improve quality and lower production costs, questions of capital construction, output rates, management, etc.

Production conferences, at which everyone present is free to voice his opinion, to criticize shortcomings and suggest improvements, give evidence of the democracy ruling in industry management. The workers and foremen, the engineers and directors are not fenced off from one another: they are workmates united by mutual respect and a conscious approach to their work. The workers carry out the orders of their foremen, engineers and directors, yet at the same time they may criticize the latter's work at production conferences and other meetings. Trade-union control—control by the masses, control from below—is a reliable guarantee that one-man management will not lead to bureaucratic perversions. A director's prestige and power depend entirely on the support he receives from the masses. Production conferences are therefore a very good means of building closer ties between the managerial staff and the workers. Over thirty thousand enterprises in the country have adopted the practice of maintaining production conferences as permanent bodies.

An annual collective agreement is concluded between the management of every enterprise, construction project and state farm and its trade-union committee, acting on behalf of the employees. The collective agreements, discussed and approved beforehand by the workers, cover labour and welfare conditions. Fulfilment of each clause by both the workers and the management is supervised by the trade-union committees.

The Soviet Union is a country of working people, and therefore the interests of the state and the trade unions coincide absolutely. The Communist Party and the Government always support the trade unions in their efforts to eliminate any shortcomings.

Soviet trade unions are vested with extensive rights to protect the material and spiritual interests of the working people. They take part in the elaboration of labour laws and wage scales and see that the labour laws are observed; they control adherence to labour protec-

tion and safety engineering rules; they watch the fulfilment of housing construction plans and have a say in the flat distribution; they supervise the work of trading and public-catering establishments.

Through their trade-union organizations the working people exercise control over the correct utilization of state social insurance funds, over the distribution of passes to sanatoriums and rest homes, the construction of planned medical and child-welfare establishments, and the medical service rendered to the population.

Trade unions spend considerable sums on cultural and educational work and on mass sporting activities. The 1957 expenditure equalled approximately 2,000 million rubles. The Trade Unions have at their disposal over 11,000 clubs, houses and palaces of culture, 115,000 Red Corners, about 18,000 libraries, over 11,000 film projectors, 1,156 stadiums, 3,408 sports grounds, 59 houses of physical culture, 1,193 sports halls, 653 swimming pools and aquatic sports stations, 1,186 skiing camps, etc. In the U.S.S.R. there are 50,000 trade-union sports organizations with a membership of 6,500,000, among them 2,500 Masters of Sport.

Trade-union bodies are elected by and accountable to the working people who are fully appreciative of the concern shown for their work and welfare. In their work of rallying the masses, trade unions use methods of persuasion, comradely discipline, and encouragement of initiative.

Members of 416,000 trade-union bodies (or 96 per cent of all the primary organizations) distribute the trade-union work among themselves in order to obviate the need to employ a paid staff.

Solidarity in the trade-union movement is one of the aims of the Soviet trade unions, in pursuance of which they help to consolidate the World Federation of Trade Unions, of which they are members, and work to extend their ties with trade unions abroad. On their invitation, 350 trade-union and workers' delegations from 80 countries, including 210 delegations from 68 capitalist countries, came to visit the U.S.S.R. in 1957. That same year, Soviet trade unions sent 152 delegations to different countries abroad. The celebrations of the 40th anniversary of the Great October Socialist Revolution were attended by 718 trade-union and workers' delegates from 69 countries on the invitation of the All-Union Central Council of Trade Unions.

THE YOUNG GUARD

The Soviet youth organization is closely linked with the Party, is guided by the Party in its work, and therefore bears the name of the Young Communist League. It was established in October 1918 at the First All-Russian Congress of Workers' and Peasants' Youth Unions, and today has a membership of 18,500,000 boys and girls. From the outset, this organization has been indivisible from the Party.





Lenin was the founder of the Young Communist League, which proudly calls itself Lenin's Y.C.L.

To live as Lenin lived, to be always in the vanguard of the fighters for the Revolution, to be in the first ranks of men building communism—such are the noble aims guiding the Soviet youth.

The young guard of workers and peasants fought side by side with their fathers for the people's emancipation and rights. The first generation of Y.C.L. members was tempered in the fire of the Civil War. "Together with our Y.C.L. card we were handed a rifle and 200 cartridges," wrote Nikolai Ostrovsky.

The three all-Russian drafts put through during the years of the Civil War and foreign intervention mobilized over 25,000 Y.C.L. members.

The Young Communist League was awarded the Order of the Red Banner for heroism and service in battle during the Civil War and foreign intervention.

"We promise to be worthy of this high award, we promise to be worthy of our comrades who fell in battle for the Soviets." With this promise the young people set to the socialist reconstruction of the country in the 1920's.

The country was short of metal and coal. The Y.C.L. members of Moscow, Petrograd and Kharkov started a campaign for collecting metal scrap. In July 1921 all the Donbas Y.C.L. groups mobilized their forces to rehabilitate the country's "stokehole," and went to work in the coal-mines. When the country's industrialization plan was launched, members of the Y.C.L. were always in the thick of construction.

Over 350,000 Y.C.L. members worked on the great projects of the First Five-Year Plan, such as the Dnieper Hydro-Power Station, the Stalingrad Tractor Plant, the Moscow Ball-Bearing Plant, the Turksib Railway, the Stalinogorsk and Berezniki Chemical plants, the Svir Hydro-Power Station, and many others. Every one of the construction projects was as good as a school for the young people, but practical knowledge alone was not enough. The Soviet Union needed new cadres of Bolsheviks skilled in different professions.

In 1928 and 1929 the Y.C.L. organization sent thousands of boys and girls to workers' high schools, institutes, technical secondary schools and professional classes.

In the course of the first and second five-year plan periods, the country's professional staff was increased by 118,000 engineers and technicians, 69,000 agricultural specialists, 9,000 doctors and 19,000 teachers.

The Y.C.L. was the Party's reliable help in carrying through the collectivization campaign. Thousands of young enthusiasts responded to the Party's call to "man tractors" and led the fleet of new farming machinery to merge the individual plots into vast collective-farm fields. Y.C.L. village organizations took unanimous decisions to join

collective farms. By June 1929 the number of Y.C.L. members who had joined reached 15,000.

The Order of the Red Banner of Labour was awarded to the Y.C.L. in 1931 in recognition of the young people's valiant labour in economic construction.

Work on the great construction projects developed communist ethics in the young people, shaped their characters and taught them to be brave, persevering, selfless and insistent, to strive for a set goal whatever the obstacles and difficulties on the way. All these wonderful traits of the young Soviet people stood the test of the greatest of trials—the Great Patriotic War.

Orders and medals for bravery and valour were conferred on more than 3,500,000 Y.C.L. members. Of the total of 11,000 people awarded the title of Hero of the Soviet Union, 7,000 were Y.C.L. members.

On April 30, 1945, the Red Banner—the Banner of Victory—was hoisted above the Reichstag by two Young Communist Leaguers—Mikhail Yegorov, a Russian, and Meliton Kantaria, a Georgian.

For heroism in the Great Patriotic War the Y.C.L. was granted the highest award in the country—the Order of Lenin.

The Party called upon the Y.C.L. to take part in post-war reconstruction. The young people helped to raise Stalingrad from the ruins, to restore the flooded Donbas coal-mines and the blown-up Dnieper Hydro-Power Station. They worked on the Volga-Don Canal project, on the construction of the Volga and Stalingrad power stations, the Moscow University and Luzhniki Stadium in Moscow. They built an-

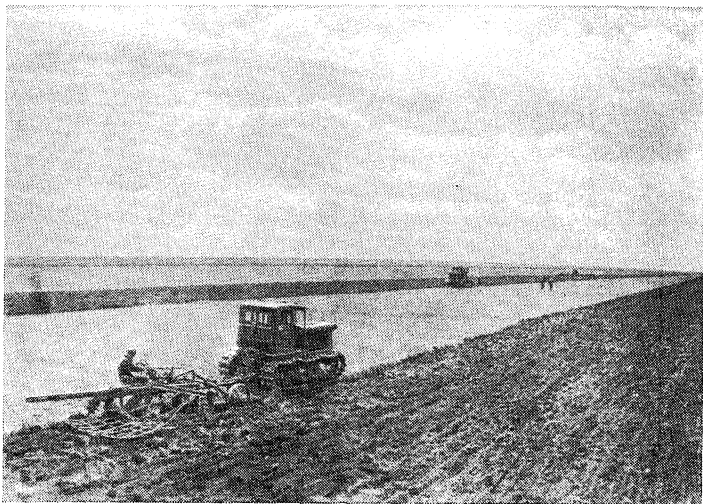
other new town—Komsomolsk on the Volga.

The Y.C.L. received its fourth award—the Order of Lenin—on October 29, 1948, the day of its thirtieth anniversary.

Over 3,500,000 Y.C.L. members are presently engaged in all branches of industry. Approximately 3,000 Y.C.L. members are presently working on state and collective farms.

Soviet young people have proved that there is always room for heroism in this world, that heroic deeds may be performed not only in war but in peace time too. It was certainly heroic of the 350,000 young boys and girls who, in 1954, volunteered to part with their comfortable homes and familiar ways of life and set out for Siberia, Kazakhstan, the Urals and Volga area to develop the virgin lands. The Museum of the Revolution in Moscow, where material dealing with the revolutionary past of the Soviet people is collected, acquired a new exhibit, another glorious memento of the history of the Soviet people, a witness to the valour of the Soviet youth. The new exhibit, received from Kazakhstan, was an ordinary tent, rain-washed and faded in the sun, one of the thousands that had dotted the steppe in that first year.





Ploughing Virgin Soil

In recognition of its members' labour heroism the Y.C.L. was awarded the Order of Lenin, its fifth award.

Pursuance of a common aim and engagement in selfless labour mould the young Soviet boys and girls into true Leninists. The Young Communist League is not simply the Party's faithful assistant, but also its reserve.

The Y.C.L. has its own reserve as well—the Young Pioneer Organization which it guides and helps.

The history of the Young Communist Leaguers proves convincingly that the banner raised by their fathers in 1917 is in good hands, and that it will be borne aloft towards the final goal—the victory of communism.

MAN—SOUNDS PROUDLY

Nature has endowed man with the greatest wealth—intellect, and the faculty of penetrating into the secrets of the world and remaking it in the interests of society. There is no closer response to the bidding of man's intellect and his high mission on earth than the establishment of freedom, equality and brotherhood among people. Only communism is capable of wholly realizing these noble ideals; even in its earlier phase, socialism, they are already beginning to assume form.

Socialist society has done away with all forms of exploitation and oppression, has given the citizens rights, personal freedom and equality in all spheres of life, and united equal nations and peoples of the U.S.S.R. into one family. The new relations between the people of this new world have conceived new moral standards, which are developing into the moral standards of the future society.

THE RIGHTS OF MAN

The satisfaction of man's material and spiritual needs, and the creation of conditions favourable for his all-round development—are the main tasks of socialism and socialist democracy.

Economically, the rights of the Soviet citizens are guaranteed by the socialist system of economy and socialist ownership of means of production.

Politically, they are guaranteed by the fact that the working people themselves, guided by the Communist Party, hold the reins of power.

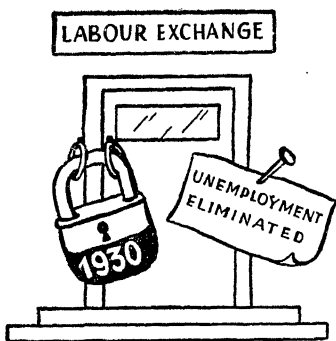
Legally they are guaranteed by the Soviet Law which safeguards the civic rights enunciated in the Constitution.

Man has but one life, and in order to live it usefully for himself and society he must have a chance to study, work, rest, and share in all the material and cultural benefits of society. Socialist democracy provides this opportunity by guaranteeing extensive *social and economic rights* to the citizens.

The right to work, the most essential of man's rights, is guaranteed by a steady development of all branches of the national economy, and the exclusion of economic crises.

Industrialization in the U.S.S.R. did away with unemployment once and for all.

On April 1, 1928, 1,576,000 unemployed were registered at the Labour Exchange.



On October 1, 1930, the number dropped to 240,000.

By the fourth quarter of 1930, unemployment was completely eliminated.

Young people who have grown up in the socialist state know of this scourge of the working people only from books and from what the older generation tell them.

Beginning with 1945, the number of people employed in the U.S.S.R. has been growing on an average by over 2,000,000 a year.

The right to education is ensured by free tuition at and free admission to all educational estab-

lishments, from the elementary to the higher.

Universal and compulsory eight-year school education is presently being introduced instead of the compulsory seven-year school education enforced heretofore.

The state bears all the expenses involved in the education of its young citizens, such as the building and equipment of schools, salaries of the teaching staff, etc. In addition, the state pays monthly grants to a majority of higher and secondary (technical) school students and provides them with hostel accommodation.

The right to rest and leisure is ensured by the institution of annual vacations with full pay.

The state (as well as collective farms individually) builds and maintains an ample number of sanatoriums, rest homes, clubs, stadiums and palaces of culture.

The policy of making shorter working hours without wage-cutting is steadily being put through.

The right to maintenance in old age and in case of sickness and disability is ensured by the extensive development of social insurance facilities. The state and collective farms allocate special sums from their budgets for the purpose.

Old age, disability, and loss-of-breadwinner pensions have been instituted.

Homes for the old-aged and invalids are being founded.

Grants-in-aid are paid to unmarried mothers and mothers of large families.

The social and economic rights of the Soviet citizens summarize the socialist state's concern for the people from the cradle to old age, a concern which facilitates the free development of free people.

In a society where exploitation of man by man has been eliminated there must obviously be freedom of personality, the right to take part in public matters, to freely express one's opinion and have one's own viewpoint. Socialist democracy, therefore, guarantees its citizens extensive *political freedoms and rights*.

The freedom of conscience is guaranteed by the separation of the church from the state, and the school from the church. Religion is considered a personal matter, and no mention of it is made in any official document, be it a passport or a service record. Citizens may profess any religion they wish, or profess no religion at all, or conduct anti-religious propaganda.

Freedom of speech, freedom of the press and freedom of assembly, street processions and demonstrations are ensured by placing at the disposal of the working people and their organizations printing presses, stocks of paper, public buildings, the radio, and other material requisites for the exercise of these rights.

In a socialist society there can be no freedom for the diffusion of anti-popular ideas aimed to undermine the foundation of the social order and state system or detrimental to the cause of socialism. Propaganda of war, racial discrimination, national enmity, amorality and other misanthropic ideas is prohibited and punishable by law.

The freedom of unions is exercised by the right to unite in public organizations: political, trade-union, co-operative, sports, national defence, technical, scientific and cultural.

Citizens of the U.S.S.R. are guaranteed inviolability of the person, of the homes and of the privacy of correspondence.

No Soviet citizen may be placed under arrest except by decision of a court or with the sanction of a procurator. The law makes strict provision for cases where arrest is admissible.

No one may enter the home of a Soviet citizen without his permission except in cases specially provided for by the law.

While granting the citizens extensive social, economic and political rights, the Soviet Government also charges them with duties without the execution of which socialist society could neither exist nor prosper.

It is the foremost and indisputable duty of every citizen of the U.S.S.R. to abide by the Constitution of the U.S.S.R. and observe the Soviet laws based on it.

One of the main sources of strength of the Soviet state lies in the fact that its laws are consciously and voluntarily observed by an overwhelming majority of the population. The revolution could not have triumphed nor could the Soviet state have achieved its economic and political successes, if a strict revolutionary order and discipline had not been maintained in the ranks of the working people and the laws of their own proletarian government had not been observed to the letter.

In the U.S.S.R. work is a duty and a matter of honour for every able-bodied citizen.

The duty to work is expressed in the principle applied in the U.S.S.R., viz. "He who does not work, neither shall he eat." Socialist society is merciless towards idlers trying to live at the expense of others.

To defend the country is the sacred patriotic duty of every citizen of the U.S.S.R.

Countless armed attacks and acts of armed provocation, organized by world imperialism, attended the birth and development of the

Soviet state. The U.S.S.R. owes its victory over its strong and treacherous enemies to the readiness of millions of Soviet citizens to defend the freedom and independence of their socialist Motherland with their lives.

Universal military service is law. It is the duty of every man of military age to serve in the ranks of the Soviet Army and take an oath of allegiance to his Motherland.

THE UNION OF EQUALS

The Russian Empire took many centuries to build. It extended its domains and took numerous tribes and peoples under its royal wing. Some succumbed to force, and others sought protection from the arbitrary sway of foreign invaders. There was a brotherhood of peoples in the Russian Empire to defend the country from enemy invasion and fight oppressors by joint endeavour. There was oppression of the small nations who groaned under a double yoke: the "great" Russian tsar, and the "small" local princelings, princes, khans, beys and meliks. Tsarism and the exploiting classes cultivated nationalistic prejudices, stirred up national hatred and enmity. The principle of "Divide and Rule" was applied in tsarist Russia.

The October Revolution eliminated national oppression and inequality for ever. The "Declaration of the Rights of the Peoples of Russia" published on November 16, 1917, proclaimed:

- the equality and sovereignty of the peoples of Russia;
- the right of nations to self-determination, up to secession from the Union and formation of an independent state;
- the annulment of all and every national and religious privilege and limitation;
- the free development of national minorities and ethnic groups inhabiting the territory of the U.S.S.R.

The peoples of Russia, freed from exploitation, chose the path of socialism and joined in fraternal union. The Union of Soviet Socialist Republics was formed on the initiative of Lenin in December 1922. On joining this Union some nations recaptured their forfeited state rights, while others first received them.

The U.S.S.R. comprises 15 Union Republics.

Each Union Republic has its own Constitution, its own legislative organs of power (The Supreme Soviet of the Union Republic) and organs of state administration (the Council of Ministers of the Union Republic), which decide all issues with the exception of those the jurisdiction over which the Republic has voluntarily transferred to the all-Union organs of state power and state administration.

The territory of a Union Republic may not be altered without the consent of its Supreme Soviet.

Each Union Republic has the right freely to secede from the U.S.S.R.

Each Union Republic has the right to enter into direct relations with foreign states and to conclude agreements and exchange diplomatic representatives with them.

Union Republics have the right to their own military formations.

Instruction in schools and other educational establishments, as well as business correspondence, etc., is conducted in the language of the given Union Republic and in Russian, which is the universally recognized all-Union language.

All Union Republics have an equal number of representatives in the Union of Nationalities of the Supreme Soviet of the U.S.S.R.

The Communist Party and the Soviet Government systematically pursue the policy of extending the rights of the Union Republics. According to resolutions adopted in recent years, Union Republics have been entrusted with the legislation in criminal and civil judicial procedure and with matters concerning regional and territorial division. An economic committee has also been instituted at the Soviet of Nationalities of the Supreme Soviet of the U.S.S.R. As a result of the reorganization of the national-economy management, the Councils of Ministers of Union Republics have become empowered to direct the development of practically all branches of industry functioning in their republics through the Economic Councils.

Besides the Union Republics, which are national sovereign states, there are other forms of political autonomy and self-government of small nations in the U.S.S.R. These are the Autonomous Soviet Socialist Republics, the Autonomous Regions and the National Areas.

The Revolution brought the peoples of Russia more than the right to independence and political self-government—it also provided for their speedy economic and cultural development, which is an essential condition for establishing genuine equality between nations. With the brotherly help of the Russian people, many of the small nations peopling the U.S.S.R. have achieved more in a short two or three decades than would have taken them centuries under different conditions.

The national policy of the Communist Party based on Lenin's ideas was particularly effective in the speedily accomplished industrialization of the former non-Russian outlying regions. This policy has resulted in an economic levelling up which makes a reliable basis for the equality of nations in all spheres of life.

Statistics show that industrial output has the prevalent share in the total industrial and agricultural output of the Union Republics.

The following facts will give some idea of what the Soviet Government had inherited from tsarist Russia: different peoples inhabiting the country had different levels of social development; industrial capitalism ruled in Central Russia, feudal relations were predominant in Central Asia, while the peoples of the North still maintained a tribal system. Some peoples lived the life of nomads, while others were steadily dying off.

The Seven-Year Plan envisages an economic upsurge in all the Soviet Socialist Republics, and consequently an all-round cultural development of all Soviet peoples.

For example, the capital investments to be made in the national economy of the Uzbek, Kirghiz, Tajik, Armenian, Turkmen, Latvian and Lithuanian republics will be from 2 to 2.6 times the amount invested during the period 1952-58.

GROWTH OF VOLUME OF THE ENTIRE INDUSTRIAL OUTPUT IN 1957 AS AGAINST 1913

R.S.F.S.R.	32.5-fold	Armenian S.S.R. . .	49-fold
Ukrainian S.S.R. . .	20 "	Turkmen S.S.R. . .	19
Byelorussian S.S.R. .	24 "		
Uzbek S.S.R. . . .	16 "	<i>Compared with 1940</i>	
Kazakh S.S.R. . . .	40 "		
Georgian S.S.R. . . .	31 "	Lithuanian S.S.R. .	7- fold
Azerbaijan S.S.R. . .	13.5 "	Moldavian S.S.R. .	6.7 "
Kirghiz S.S.R. . . .	46 "	Latvian S.S.R. . .	7.7 "
Tajik S.S.R. . . .	29 "	Estonian S.S.R. . .	8.4 "

All the peoples of the U.S.S.R. have achieved great progress in the development of their culture, which is national in form and socialist in content.

Whereas in tsarist Russia instruction in schools and other educational establishments was mainly conducted in Russian, today it is conducted in 59 different languages.

More than forty peoples inhabiting Russia had, before the October Revolution, no written language, national literature, music or art of their own.

The October Socialist Revolution made education accessible to the working people of all nationalities.

In the number of establishments of higher education set up, the Union Republics have outstripped not only the countries of the East but also capitalist countries in Western Europe.

In the Uzbek S.S.R. there are 81 persons with a higher education to every 10,000 of the population, which is double the number in France and 7 times in Turkey.

In the Tajik S.S.R. there are 92 students of higher educational establishments to every 10,000 of the population, which is 8 times the number in Turkey and 10 times that in Pakistan.

Every Union Republic has its own Academy of Sciences, with the exception of Moldavia where a branch of the Academy of Sciences of the U.S.S.R. is functioning.

Co-operation and mutual assistance among the peoples of the U.S.S.R. is a most impressive feature of the economic and cultural life of Soviet society. For example, one could not picture the construction of those gigantic hydrotechnical systems on the Volga, the Dnieper, the Amu-Darya, the Lake Sevan and the Kura without the co-operation of Russian, Ukrainian, Armenian, Kazakh, Byelorussian, Uzbek and other workers, engineers and technicians. One could not see those projects without the drag-lines produced by the Urals Heavy Machinery Plant, or the powerful tip-up lorries put out by the Minsk Auto Works in Byelorussia. Electric trains, made up of cars put out by the Riga Carriage Works, serve many an electrified railway in the Soviet Union. The hydro-turbines, produced by the Riga Turbine Engineering Works, are installed not only at the power stations of Latvia's collective farms, but also at many power stations in Byelorussia, Moldavia, Georgia and other republics. Thousands of "S-80" tractors, put out by the Chelyabinsk Tractor Works, serve the virgin

and long-fallow lands of Kazakhstan and Altai. The Azerbaijan, Turkmen, Tajik and Kirghiz republics make wide use of the cotton-cultivating machines produced by the Tashkent Agricultural Machinery Works. There is no republic in the Soviet Union where the state or collective farms could do without the highly efficient machines produced by the Rostov Agricultural Machinery Plant, including tractor-drawn or self-propelled grain and maize harvesters, mowing-machines, etc.

Friendship among free nations is a source of great strength, their spiritual enrichment, a pledge of liberty, independence and prosperity. Its wonderful fruits can be seen everywhere. All the peoples of the Soviet Union gave a whole-hearted response to the call of the Party to go and develop new lands in Kazakhstan, Siberia and the Volga area. Scores of thousands of workers, collective farmers and office people of various professions streamed to the localities from all the Union Republics. Today the Kazakh and Altai steppes are witnessing what the combined efforts of Russians, Ukrainians, Armenians, Uzbeks, Byelorussians, Estonians, Lithuanians, Azerbaijanians, Georgians, Tatars, etc., can do.

The greatest hydro-electric station in Central Asia, commissioned in 1957, was called the "Friendship Among Nations" Station. There could hardly be a more apt name for it since people of 37 nationalities had taken part in its construction.

Helping hands were stretched to the Turkmens from all the Union Republics after the Ashkhabad earthquake in 1948. Trains bearing the laconic sign "Ashkhabad, Urgent" started towards Ashkhabad from every direction. Notices were put up at the post-offices saying: "Parcels to Ashkhabad are given priority." Orders from Ashkhabad were executed by all the factories and mills ahead of schedule.

Ten years later the existence of Kursk, an old Russian town, was threatened. A store of German explosives was discovered to have been left behind by the enemy when they retreated from the town. The slightest touch could set them off. Moving the store beyond the town limits was dangerous; it was more advisable to blow it up on the spot. However, the area of possible destruction included a newly-built workers' settlement, 700 dwelling-houses, a gypsum works, a string factory, a railway junction, etc. Disaster was averted and the store safely removed by a group of volunteers, among whom there were men from six Union Republics.

Friendship among the peoples of the U.S.S.R. has stood the test of time and trials. It has a glorious history and good traditions, it is a wonderful motive force of the development of Soviet society.

MAKE WAY FOR THE WOMEN!

For centuries the role of women in the world has been that of a down-trodden and humbled part of humanity.

Socialism gives women the right to work, to education, to enjoyment of the country's material and cultural values, and accords them equal rights with men.

The first step towards the emancipation of women was guaranteeing them equal rights with men at home. The right of a say in the family, which was the simplest and most impressive way to let millions of women feel the turn in their fortunes, proved to be of great political significance. It prepared the women to assume the rights and duties of Soviet citizens and to take an active part in the public life of the country.

As early as December 1917, Lenin signed the first Soviet decrees on marriage and divorce, and in 1918 the marriage, family and guardianship code was adopted.

All limitations of women's rights provided for by the laws of tsarist Russia were annulled. Henceforth, women received equal property rights with men. Women were free to choose their professions and domicile. The adoption of one or the other's surname after marriage was decided by mutual consent. They had equal rights of parenthood.

The extensive rights accorded Soviet women to participate in any branch of the national economy enabled them to become men's equals in the economic, social and political life of the country. In the process of socialist construction the women of the Soviet Union consolidated their equality of rights, and the men came to regard them as their comrades and companions-in-arms. Together they built towns and factories, developed industry, science and culture, and defended their country in war.

Soviet women comprise 45.5 per cent of all the workers engaged in industry.

At the Likhachov Automobile Works, one of Moscow's major enterprises, women's teams led by Nina Smirnova, Galina Mitrofanova and Nina Zolotova were the first to win the title of "Team of Communist Labour." The role of women in agriculture is immense. Thousands of women hold the posts of collective-farm chairmen and brigade leaders, while tens of thousands head field teams. Soviet women, including rank workers, engineers and scientists, have contributed to the creation of the first Sputniks and the space rocket.

The alleged inferiority of women's work in industry has been disproved. The excellent work of many Soviet women may be held up as an example of truly creative and selfless endeavour.

Orders and medals have been conferred on approximately 1,091,000 women, among them 2,680 received the titles of Hero of Socialist Labour and Hero of the Soviet Union.

Women are paid the same wages as men for the same amount and quality of work done. According to Soviet Law, violation of this principle is a grave offence.

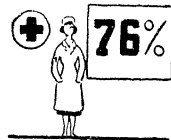
The state enforces special labour protection laws for women employed in socialist industry.

The law prohibits the employment of women in hard work which is detrimental to health, such as smelting and pouring of liquid metal, rolling of hot metal, cleaning of gas-mains, on certain jobs in the meat-packing, chemical, printing and publishing industry, in rail and sea transport, mining, construction and communal and public service.

The wise and far-sighted policy of the Government has helped the women to take the lead in a number of branches. They make up 70 per



cent of the country's teachers, 76 per cent of the physicians (91 per cent of the total medical personnel) and approximately 70 per cent of the employees in scientific, educational and cultural institutions.



Making good use of their right to education, Soviet women soon bridged the gulf that separated them from the men and held them back from fully developing their intellect.

In 1957, women made up 48 per cent of all the students of secondary technical schools and 49 per cent of all the students of higher educational establishments. 53 per cent of the specialists in the U.S.S.R. with a higher education are women.

Approximately 19,000 Soviet women have academic degrees, of them 600 have the title of professor.

The number of women working in science is about 90,000. Over 42 per cent of all the scientific personnel of the U.S.S.R. Academy of Sciences are women.



Women utilize their political rights to actively participate in the social and political life of the country. A total of 366 women have been elected deputies to the Supreme Soviet of the U.S.S.R. (over 26 per cent of the total), 2,307 to the Supreme Soviets of Union and Autonomous republics, and more than 500,000 to the local Soviets.

Over 1,500,000 women are members of the Communist Party of the Soviet Union. Among the delegates to the 21st Congress of the C.P.S.U. there were 222 women with a casting vote, or 17.5 per cent of the total.

N.S. Khrushchov, in his report at the 21st Congress of the C.P.S.U., emphasized the need to create conditions enabling all Soviet women to make wider use of their rights, knowledge and gifts in productive, socially useful work, and to benefit by all the latest cultural achievements, both material and spiritual. The network of maternity homes, children's consultation clinics, and mother and child sanatoriums will grow considerably within the next seven years. A sum of approximately 5,500 million rubles out of state social insurance funds will be paid out in 1959 alone in pregnancy and birth grants, for maintenance of summer camps for schoolchildren and out-of-school work among children. The number of children attending kindergartens will grow from 2,200,000 to 4,200,000 in the seven-year period. As many as 5,500,000 children a year will spend their summer vacations in out-of-town Young Pioneer camps, established by the trade unions. Women will find housekeeping less burdensome in view of the stress laid on an ample provision of the population with



labour-saving devices. By 1965, the volume of foodstuffs produced will be double that of 1958.

The Socialist Revolution made the women fight for their emancipation, to break down ancient traditions, prejudices and obstacles, in order to share the new life equally with the men.

NEW MORAL STANDARDS

There are certain things which cannot be calculated or summed up, yet they have become so much a part of the Soviet world, that without taking them into account one cannot fully appreciate the deep social changes brought about by the building of socialism. To give them a name, they are the traits of new, communist ethics.

A new world conceives a new man. He is not an angel-like being as some sentimental poets would portray him, but a flesh-and-blood man of the communist tomorrow, a man of strong passions directed towards a noble goal and to the performance of great deeds in the name of work, science and comradeship. As he matures in work and in the battle for communism he resolutely rids himself of whatever survivals of the old, such as egotism, the thirst for possessions, servility and envy, may still be clinging to his mind.

One cannot appreciate the heroism of the Soviet people or their spiritual world without first studying the new traits developed in the people by the Communist Party—collectivism, Soviet patriotism, internationalism and a new attitude to work.

Collectivism is one of the greatest achievements of socialism.

Socialist property unites people into one big, friendly family. There is no disparity of interests in a society where the welfare of one depends on the welfare of all, and therefore people base their relations on friendly co-operation and mutual assistance. The principle adopted is "One for all and all for one."

Private property, on the other hand, disunites people and inspires antagonism. In a world of competition and a brutal struggle for existence, all means of making money are fair.

Collectivism means unity, solidarity and comradeship of people pursuing a common aim.

The loftier the aim, the closer the unity and the higher the efficiency of the people pursuing it. The aim of Soviet society is communism. It unites the Soviet people, and the spirit of collectivism multiplies their strength.

The strength of the Soviet man lies in his being linked to the collective. This is what Alexei Tolstoi said: "There can be no happiness for an individual outside of society as there can be no life for a plant that has been uprooted and flung on the barren sand."

A Soviet man gauges his personal successes by those of the collective. The thought was very well put by Izotov, one of the front-rank workers in the coal industry, who said: "My successes are the successes of all our miners, the achievements of the mine are my achievements."

Although the Soviet people are chiefly moved by the interests of society, it would be wrong to assume that all personal interests are

renounced. Communist ethics does not dictate forsaking one's personal interests but, rather, combining them correctly with the common interests.

Soviet patriotism is the inexhaustible source of our country's strength. It is not passive in character. The people's love for their Motherland and their sense of responsibility for it inspire them to great deeds and daring plans.

Love for the Motherland made General Panfilov's heroic men stand firm against the avalanche of German tanks and lay down their lives to block the enemy's advance on Moscow; it made Alexander Matrosov cover with his body the gun port of a German pillbox; it lent inflexible fortitude and courage to the young heroes of Krasnodon; it supported Nikolai Kuznetsov, a Soviet scout seized and tortured by the enemy, and Kamal Pulatov who, armed with hand grenades, threw himself under the head tank of a column advancing on Stalingrad.

Zoya Kosmodemyanskaya had put down in her diary before leaving for the front: "All life long we've wondered what happiness really meant. Now I know: happiness means fighting fearlessly for our country, for my Motherland...."

Patriotism also inspires the Soviet people to heroism in work. "We are working not for gain or for fear," wrote V. A. Degtyarev, an outstanding Soviet inventor. "We are moved by a sacred feeling—love for our Motherland and for our people."

Soviet patriotism is inseparably linked with *internationalism*. A notion as absurd as feeling hostile to people because they speak a different language or are of a different colour would never occur to a Soviet person.

Soviet people are internationalists, which means that they are fighting for the liberation, independence and equality of all nations be they big or small. It means that they believe in the inviolability of all peoples' rights to self-determination, to a free economic, political and cultural development. It means that they stand for co-operation and friendship among the working people of the world.

Internationalism made Soviet people voluntarily join international brigades fighting to defend the Spanish people from fascism, and makes them stand up in protest against the predatory wars launched by the world imperialists for seizure of new markets and enslavement of peoples.

Soviet workers give the warmest welcome to their foreign colleagues coming for practice in the U.S.S.R. and gladly share with them all their knowledge and experience.

Moreover, it is becoming a practice now for front-rankers in Soviet industry to make trips abroad: some to operate a lathe at a plant in China, others to help build a blast-furnace in India, and still others to drive harvesters in Bulgaria. They give their friends a practical demonstration of what "working in the Soviet way" means, and in their turn glean valuable experience from their hosts.

Tung Kwei-fu, a mother of five children, in the Chinese village Hsiapacha, close to the Soviet border, lay dying from loss of blood after a miscarriage. The Soviet frontier guards heard of it, and got a helicopter to deliver the woman to a maternity home. Blood was trans-

fused at once, donated by Zhilyaeva, Shupeiko, Zyukova, Neverova and Ryzhova, after which an operation was successfully performed. Thus the woman's life was saved.

In 1957 there was the case of the Soviet doctors in Teheran saving the lives of over 40 Iranian children from food-poisoning contracted at the soup kitchens set up by the Khaerhakh Benevolent Society, financed by Janes, an American Society. The whole personnel of the Soviet hospital at Teheran worked without a break for three days and three nights to bring the children back to life.

A brotherly attitude to people of different countries and nationalities, which has become an integral characteristic of the Soviet people, is one of the moral traits of the people of the communist future when, forgetting their differences, nations will unite into one great family.

A new approach to work illustrates the spiritual make-up of the Soviet people.

Under socialism, work is the yardstick with which to measure a man's worth, and it is his work alone that determines his position in socialist society, irrespectively of his property status, race or nationality.

Famous steel founders, outstanding physicists, milkmaids and celebrated actors, shepherds and doctors, combine operators and artists, are the people of eminence in the U.S.S.R.

Socialism and work cannot be set apart. Man attains greatness in work and work alone, said Gorky, and the more fervent his devotion to his work the greater he himself becomes, and the more productive and beautiful his work. And when we speak of the moral make-up of the Soviet people we mean, above all else, their conscious approach to work which they look upon as a matter of great social importance and a duty of honour.

Vladimir Ilyich Lenin commented with great satisfaction on the first signs of the new, conscious attitude to work. At the first communist *subbotnik*,* organized by the Moscow-Kazan Railway on May 10th, 1919, he witnessed, what he called, the dawning of the future mass heroism in work.

The great initiative bore great fruit. The first five-year plan period was distinguished for its shock-workers, counter-plans and record-time work done on the construction of the Dnieper Hydro-Power Station, the Magnitogorsk Metallurgical Works, the Stalingrad Tractor Plant, and other firstlings of socialist industrialization. In the course of the second five-year plan period, the Stakhanov movement for higher labour productivity was started in Donbas. And now, socialist emulation which teaches men daring and courage in work and is based on the principle: *help the lagging, catch up with the leading, and strive for a general upswing*, embraces over 90 per cent of all Soviet workers.

A good Soviet worker is not merely concerned with his own showings and his strivings to do 150-200-300 per cent of his daily quota, but also takes a keen interest in the results of his neighbour, the enterprise as a whole, the other plants and collective farms in the country, and the over-all showings of the Union republics.

* *Subbotnik*—labour freely given to the state on days off or overtime.—Tr.

This accounts for the initiative shown by Valentina Gaganova, a highly efficient spinner, and thousands of her followers, who voluntarily joined teams that were lagging behind. They were all prompted by a desire to raise labour productivity throughout the mill or factory concerned.

"Every advanced worker is vitally concerned with popularizing new devices and methods as much as possible," says N. Chekalin, a latheman at the Tula Boiler and Fan Works, who has many innovations to his credit. "There can be no progress unless advanced experience is exchanged and the latest achievements in technique advertised, and that is why I am very keen on sharing what I know with my colleagues and learning from them."

"It is my sacred duty to teach the young. The more heroes of labour we have the more grain we will have for our country," says M. Ozernoi, a celebrated innovator in agriculture.

Every citizen of the Soviet Union, whatever job he may be doing be it big or small, is highly conscious of his responsibility, the importance of his work for the country, and feels that he is a much-needed member of society.

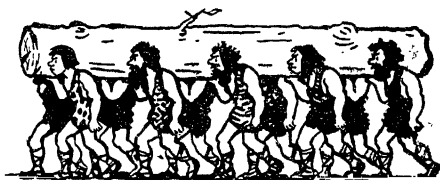
The Soviet state greatly appreciates, rewards and honours its experienced and able workers whose labour productivity sets an example for others to emulate.

Socialism enhances the prestige of the working man. Such concepts as the "Hero of Labour" and "Heroism in Work" only came to be born and firmly established in socialist society.

Results and Prospects of Free Labour

POWER

The man of today is a titan compared with his distant forbear. This is not meant as a joke. By learning to release and harness the forces of nature, man has enhanced his strength a thousand-fold. Power is one of the principal founts of civilization.



In the Soviet Union the population numbers 208 million strong but not even 5,000 million people, depending on manual labour alone, could turn out the amount of products the country is producing today. That work is done by machines driven by the power of the wind and water, coal and peat, oil and gas, the sun and the atom.

The Soviet Union has the greatest fuel and power resources in the world. Its known reserves of power, expressed in standard conventional units, amount to 1,590, 000 million tons * (for the U.S.A. the cor-

Not counting huge coal deposits that were recently discovered.

responding figure is 1,550,000 million tons, and for Europe, excluding the U.S.S.R., 730,000 million tons).

But a treasure-store is useless if man has no access to it. That was how matters stood in tsarist Russia. She lagged far behind the leading capitalist countries (U.S.A., Britain, France) in the output and consumption of power.

A considerable part (close to 20 per cent) of Russia's fuel pattern was accounted for by firewood: the inestimably rich Russian forests were burnt up rapaciously.

The Socialist Revolution turned nature's treasure-stores over to the people. Through their own tireless efforts the Soviet people discovered these stores for themselves and subdued nature surrendered her energy to them.

Today the Soviet Union is the second biggest producer of power in the world.

Fuel is the chief form of power in use in the national economy. It is the predominant source of energy in the U.S.S.R. as in other countries, but the Soviet Union's fuel pattern is rapidly changing: the importance of oil and gas is steadily increasing and the share contributed by hydro-power has grown considerably. The Land of Socialism was the first in the world to use the energy of the atom nucleus for constructive purposes.

U.S.S.R.



U.S.A.



EUROPE

EXCL. U.S.S.R.



BREAD OF INDUSTRY

Bread of industry was how Lenin called coal, which is still the country's principal source of power. It burns in the furnaces of factories and mills, drives machines, moves locomotives and river and ocean-going vessels; had there been no coke, which is obtained from coal, we would have had no use for blast-furnaces and would never have been able to produce metal.

The Soviet Union holds first place in the world for its total geological reserves of coal of different quality and technological properties.

Yet for a long time this coal had lain untapped in the ground.

Tsarist Russia produced less than 2.5 per cent of the world's coal and at the same time imported something like 9 million tons of coal or almost a third of what she mined.

Seeking to increase their profits, the foreign and Russian mine-owners artificially created coal shortages and forced the country to pay a double price for the com-



modity. They were in no haste to bring in machines. In 1913, cutting was the sole process where machines helped the miner, but even then this concerned only 1.7 per cent of the work. At the big mines horse haulage was used as a means of transportation. The principal tools of the miner were the pick and the shovel, and the chief motor—the power of his own muscles.

The mine-owners did not bother to plan the working of the coal deposits and for that reason almost the whole of pre-revolutionary Russia's coal industry was concentrated in the South—in the Donbas, close to the southern iron and steel industry, which was the main consumer. The extensive deposits of coal in the Kuzbas remained untouched. The output of the Moscow Basin was pitifully small. Trains carrying Donbas coal ran to Moscow, to the Urals and to Siberia where tremendous reserves of valuable solid fuel and chemical raw materials lay unused.

The country's geological map has changed beyond recognition in the past 40 years. The many new entries on it testify to the indefatigable work of Soviet geologists prospecting for deposits of coal.

Compared with pre-revolutionary times, the country's known reserves of coal have increased:

in the Donbas—1.5 times;

in the Moscow Basin—more than 12 times.

Coal deposits exceeding the reserves in Britain by more than 100 per

KUZBAS



cent have been discovered in the Kuzbas.

The Soviet Union's third big coal base, the Karaganda Basin, has been set up in the steppes of Kazakhstan. Large deposits of coal have been brought to light in the North Urals (the Pechora Basin), in Siberia and in the Soviet Far East (the Minusinsk, Kansk-Achinsk, Irkutsk, Lena and Tunguska basins).

But to discover a treasure-store is only to do half the job. The ability must be to hand to master it. All this virtually inexhaustible wealth of coal has now been put at the service of the Soviet national economy.

Soviet Kazakhstan alone produces as much coal as did the whole of pre-revolutionary Russia.

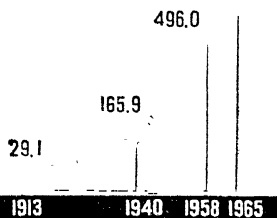
At present, the Soviet Union accounts for more than 20 per cent of the world coal output.

The coal extracted in 1958 would be enough to heat to 70°C. a lake one metre deep and occupying an area as big as the Sea of Azov.

In the output of coal the Soviet Union has left Britain, France and West Germany far behind and has overtaken the U.S.A.

COAL OUTPUT
(million tons)

600-612



In 1965, the coal output will be raised to 600-612 million tons or to 21-23 per cent more than in 1958.

The colossal scale on which the Soviet coal industry is expanding is shown, say, by the fact that the rate of increase earmarked for 1959-65 is equivalent to approximately 50 per cent of the entire output in Britain. The Soviet Union is ahead of the U.S.A. in both the rate of growth and in the absolute annual increase in the output of coal, which in 1953 through 1957 was: 30, 600,000 tons in the U.S.S.R. and 6,200,000 tons in the U.S.A.

The coal output per head of population has grown simultaneously with the increase in the total volume of the output. In terms of per capita production, tsarist Russia mined 31 times less coal than Britain, 26 times less than the U.S.A. and 5 times less than France.

In this respect the U.S.S.R. has overtaken France and at present is producing under 30 per cent less than the U.S.A. and under 50 per cent less than Britain.

What is the secret behind the rapid rate at which the Soviet coal output is growing? The answer must first and foremost be sought in the fact that socialism brought with it machines to lighten the labour of the miners and raise its productivity.

The task of mechanizing the coal industry was set by the Communist Party and the Soviet Government back in 1920, when the country had just started restoring its economy, which had been ravaged by the imperialist and the civil wars.

For the level of mechanization the Soviet coal industry moved into first place in the world in 1938, at the close of the second five-year plan period.

But even this level fell far short of satisfying the Soviet national economy which was advancing by leaps and bounds. Such arduous processes as loading coal and rock and timbering were still done manually and this acted as a check on the growth of labour productivity in the coal industry.

Mechanization entered a new stage after the war.

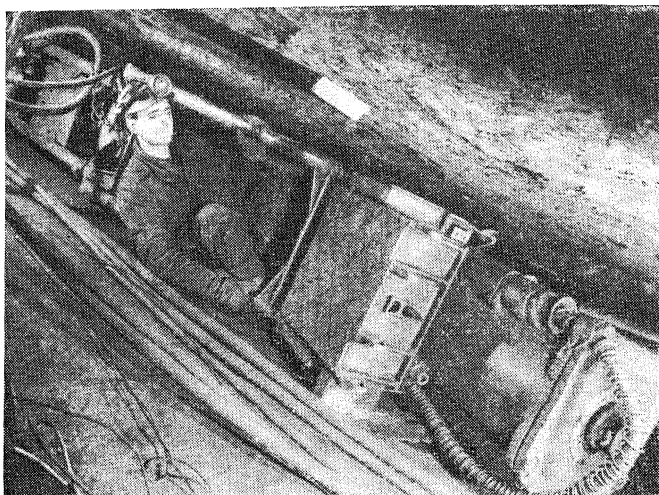
Its features are:

broad utilization of cutter-loaders in the second mining face and for mechanizing extraction from the coal face and the loading of the coal on to conveyers;

(In 1932, the world's first cutter-loaders were designed and produced in the U.S.S.R. and at the close of 1957, more than 3,000 of these machines were in use at the country's mines for 0,5-3-metre-thick flat seams. Throughout the whole of the coal industry 37.7 per cent of the loading, which was a manual process prior to the introduction of cutter-loaders, was performed by machines in 1957.)

mass utilization of coal and rock loading machines (more than 5,000 of these machines were in operation at the close of 1957) when the drilling and explosion heading method is employed; introduction of the most progressive, combine, method of heading. A series of heading combines has been designed and this is making it possible to attain the unprecedented heading speed of 1,450-1,250 metres a month;

wooden timbering is being gradually replaced by different kinds of metal and reinforced-concrete props that allow conveyers to be



A Soviet cutter-loader

moved along a pit without having to be dismantled. To date the new kinds of propping are being employed at over 25 per cent of the long-walls, while by 1960 these proppings will be in use at 64 per cent of the walls for 0,5-2,5-metre-thick flat seams.

The following gives an idea of the level of mechanization reached in the coal industry:

Operation		Level of mechanization (in % of the total volume)	
		1940	1957
Hewing and breaking	} in sec- ond min- ing face	94.8	99.1
Delivery		90.4	99.6
Loading		0.1	36.5
Loading coal and rock during heaving in main horizontal mine workings		—	51.5
Hauling (length)		58.4	99.7
Loading coal on railway cars		86.5	99.7

Technical progress has lightened the work of miners, made it less dangerous to life and health. But that is not all!

Modern technology is enabling miners to employ the best methods of extracting coal, methods such as *open-cast mining, hydraulic mining and underground gasification*.

In the past open-cast mining was superseded by underground mining because technology did not have the means of removing the capping off the coal.

In our day, when miners have the use of powerful excavators, bulldozers and other machinery, the open-cast method is becoming the cheapest and most productive compared with underground mining. It allows miners to:

raise labour productivity 5-6 times and reduce costs 3-4 times.

Open-cast mining is becoming widespread in Siberia and Kazakhstan. More than 19 per cent of the coal produced in 1957 was mined by this method.

Under the hydraulic method coal is extracted with the aid of ordinary water. A powerful jet cuts and hews the coal and transports it to the surface along chutes and pipes.

The hydraulic method makes it possible to:

increase labour productivity 1.5-2 times and reduce costs by 25-30 per cent.

"Hail, the work of the miner!" says a Soviet song. Back-breaking and thankless, the work of the miner has in Soviet years become really glorious and honourable.

The pre-revolutionary settlements of mud huts and wooden hovels, which the miners contemptuously called "kennels," have given way to modern socialist miners' towns and settlements.

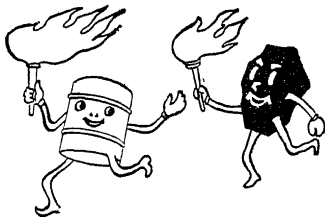
The former miners' settlement of Yuzovka, now the town of Stalino, has been transformed into a cultural centre of the Donbas coal industry. It has: community centres, two theatres, a philharmonic society, a TV-broadcasting station, three higher and nine secondary educational establishments, vocational and mining schools, parks, and nine stadiums.

All the other miners' towns and settlements have changed just as much.

"BLACK GOLD"

Coal is a splendid and reliable fuel, but it is not the best. In recent years it has been gradually ceding its long-standing and firm dominance to liquid fuel—to oil and natural gas. The Soviet fuel industry is now emphatically following the line of giving priority to the development of oil and gas extraction and refining.

In the total volume of fuel, the share of oil and gas will rise from their present 31 per cent to 51 per cent in 1965, while the share of coal will drop from 60 to 43 per cent. The extended utilization of oil and gas as technological and power fuels and as raw materials for the chemical industry will help to effect a considerable improvement in the exploitation of the country's fuel and raw material resources and to bring about a big saving in social labour.



Oil means petrol, jet and diesel fuel, and various oils and lubricants without which the operation of internal combustion engines and all kinds of machinery would have been inconceivable.

For its calorific value, oil exceeds:

the best coal	1.5 times,
peat	2.5-3 times,
combustible shale . .	7 times.

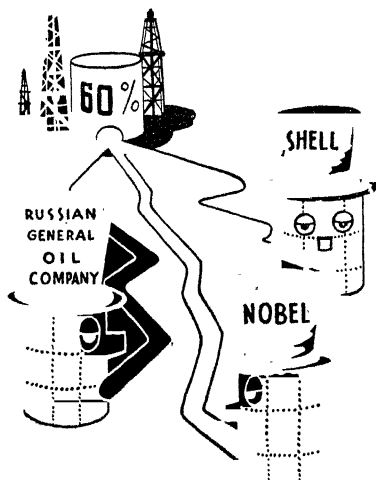
It is three times cheaper to extract oil than coal, while the output of the workers is 4 times higher than in the mining industry.

Oil is not only economical and efficient as a fuel but it is also an extremely important chemical raw material. Artificial fibre and washing agents, synthetic rubber and technological greases, plastics and alcohols are all products of the refining of oil and the accompanying gases.

Although tsarist Russia had substantial reserves of "black gold" scattered all over her territory, the country was "starved" for oil. More than 97 per cent of the oil extracting and a considerable part of the refining industry were concentrated in the southern regions, chiefly around Baku and Grozny.

Russia's principal oil resources were in the hands of foreign capitalists.

On the eve of World War I, three foreign companies (the Russian General Oil Company, Shell and Nobel Bros. Ltd.) controlled 60 per cent of the oil extracted in Russia. They refrained from investing big sums of money into exploratory drilling and the development of new oilfields and had no intention of equipping the oilfields with efficient machinery. Bailing and open gushers were the most widespread methods. Only an insignificant portion of the valuable liquid fuel was brought to the surface and enormous



wealth was left buried in the ground.

The Civil War, the domination of foreign interventionists at the oilfields and the wrecking activity of the owners brought the oil industry to a complete standstill. That was the state it was in at the dawn of Soviet power. When the oil industry was nationalized in 1920, the output hardly reached 3 million tons, numerous oil wells were derelict and boring had been stopped.

The period of the five-year plans were years in which prospecting proceeded intensively and new, rich deposits of oil were discovered.

In Azerbaijan the old Baku oilfields were enlarged and dozens of new ones opened. Great deposits of oil were bared in Devonian rock in the huge expanse between the Volga River and the Urals. A large portion of all the known deposits of oil in the U.S.S.R. is in this area, where the reserves and output are greater than in the southern regions that prior to 1946 had held the leading position in the Soviet oil industry. The sea-bed oilfields of the Caspian extend from Makhach-Kala to Derbent. The oilfields of the Kuban-Black Sea area run all the way from Stavropol to Temryuk. The expanse between the Volga and the Mugojar Mountains and from the Southern Urals to the Caspian is occupied by the Emba oilfields. Fine-quality oil has been discovered in Kazakhstan and in the Soviet Far East. Far-away Ukhta is now supplying oil to the Northern regions.

In the post-war years the known oil reserves have increased several times over.

The discovery of large deposits of oil and the opening of new oilfields in different parts of this huge country are making it possible to distribute more uniformly not only the extracting but also the refining industry. Oil refineries are being built close to the oilfields and the biggest consumers.

The Eastern regions with their immense reserves of oil have developed into a major refining base.

At the same time the problem of rationally distributing the oil industry in the Soviet Union cannot be considered as having been completely solved. In some of the big, important economic regions the oil industry is still not developing fast enough to satisfy the growing demand for oil and oil products.

The next few years will witness changes in the distribution of the oil industry, which will be developed primarily in the European part of the U.S.S.R. and in Central Asia on the basis of the deposits that have been discovered in these areas. In 1965, the Eastern regions will be producing 30 per cent of the Soviet Union's oil. Refineries will be built in almost all the big consumer regions; the country's demand for oil products will be fully satisfied, and the quality and properties of petrol, diesel fuel and oils will be considerably improved.

Something like 10,000 kilometres of pipelines connect the sources of oil with the districts where it is refined and consumed. An underground pipeline carries Tatar and Bashkirian oil to the refinery at Ufa. "Black gold" flows from Romashkinskoye to Saratov via Kuibyshev. The Ufa-Omsk pipeline carries petrol and kerosene to the newly-developed farm lands.

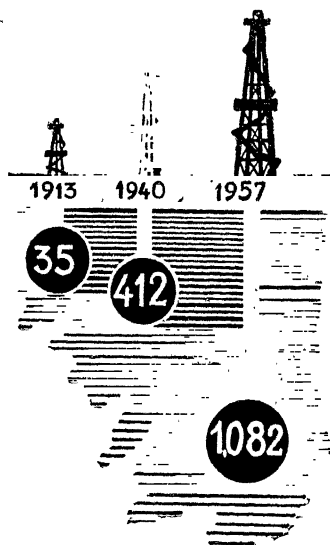
With the oil industry expanding rapidly, the length of the pipelines will be almost trebled in the next seven years and their turnover will increase approximately 5.5 times. This will to a large extent make it unnecessary to spend large sums of money for the transportation of oil and oil products by rail.

In Soviet years the expansion of the oil industry was accompanied by a sharp rise of its technical level. The U.S.S.R. now holds one of the leading places in the world for the technical level of the oil industry and for the efficiency with which the oil resources are utilized.

The primitive methods by which small wells used to be sunk in tsarist Russia have been superseded by the progressive turbine method. Worked out and first employed by Soviet specialists, this method now covers more than 85 per cent of the drilling.

The work of the driller is now much easier. Wells nearly 1,700 metres deep are sunk in an average time of about two months (in 1940 it took over a year to sink such wells). Breakages of the drilling equipment have been drastically reduced. The ear-splitting roar accompanying rotary drilling has been done away with.

**INCREASE IN THE MONTHLY
RATE OF BORING PER
INSTALLATION (m.)**



Soviet turbodrills have won world recognition. In 1956, the American Dresser Industries signed an agreement with the Soviet Union for the purchase of rights to produce Soviet-designed turbodrills in the U.S.A. and bought a batch of these drills.

With the latest technological equipment at their disposal, Soviet oilmen are now sinking inclined wells through all kinds of rock, beneath capital buildings, on the bed of rivers and at great depths in the open sea.

Formerly it used to take many scores of years to develop big oilfields and not more than 40 per cent of the reserves used to be extracted. A new well used to yield hundreds of tons of oil a day but in a few years its debit would drop to 10-20 tons and then to several scores of kilograms. A tremendous outlay of means and labour was required to extract the oil remaining in the layer.

In those conditions the slogan of "Drain the layer to the last drop!" that was recently advanced by Soviet oilmen, would have seemed fantastic. This became feasible in the Soviet Union, which was the first country in the world to apply the method of "trans-contour and intra-contour inundation"—a method of artificially sustaining the required pressure in the oil layer with the aid of water, the very water which has always been regarded as a harmful hindrance and which was looked upon as a menace by oilmen.

This method helps to:

- reduce the period of developing big deposits from 200-300 to 25-30 years;
- extract more than 60—70 per cent of the oil reserves from the ground;

extract oil by the simplest and cheapest, gusher, method with the least expense.

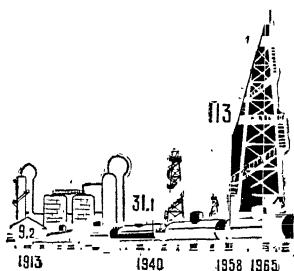
Oilmen have saved the state thousands of millions of rubles. For a rate of increase of one ton in the output of oil, the capital investments were:

in the pre-war period 1,100 rubles;
in 1957 300 rubles.

The development of the newly-discovered rich deposits of oil with the aid of the latest, progressive technology has enabled the Soviet Union to accelerate its output of liquid fuel.

OIL OUTPUT (million tons)

230-240



1955

U.S.S.R. **U.S.A.**



Increase in oil output per newly-commissioned well (tons)



Volume of boring per rate of increase of 1 ton (metres)



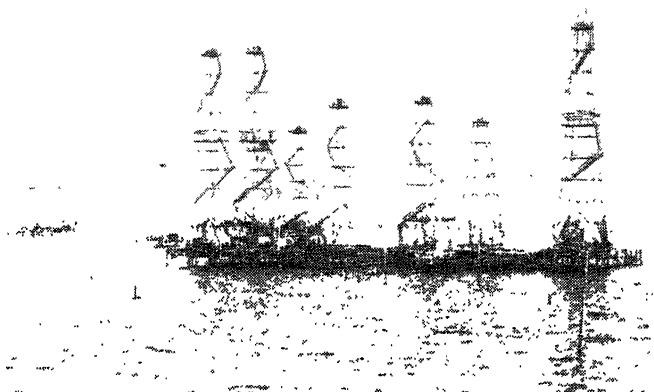
Mean daily debit per well (tons)

In 1958, the Soviet Union produced 113 million tons of oil. The U.S.S.R. is producing three times less oil and still less in terms of per capita output than the U.S.A., but there is every possibility that this lag will be eliminated within a short space of time. Let us turn to facts.

For the annual rate of growth of oil output, the U.S.S.R. holds first place in the world.

In the period from 1953 through 1957, the annual absolute rate of growth was:

in the U.S.S.R.	11.4 million tons,
in the U.S.A.	8.8 million tons.



Off-shore oil derricks in the Caspian

The output target for 1965 is 230-240 million tons, which means that in the course of the next seven years the annual rate of increase will amount to 16.7-18.1 million tons as against 6.6 million tons in 1951-55.

REMARKABLE FUEL

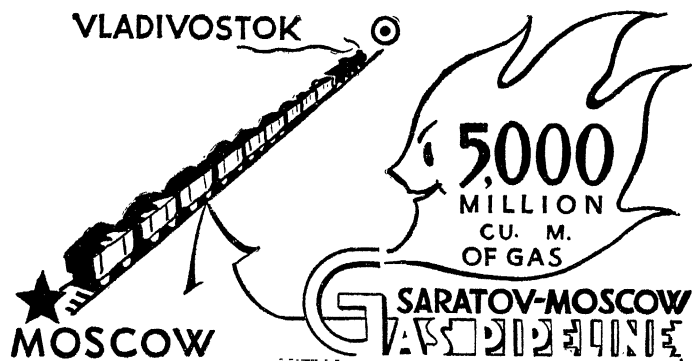
In gas there is remarkable power. It not only produces heat and light and helps to generate electricity but also yields valuable raw materials for factories and mills and all without ash and dust, without smoke and soot, without polluting the air and endangering vegetation.

Tremendous deposits of natural gas, amounting to thousands of millions of cubic metres, lie hidden in the Siberian taiga, in the deserts of Central Asia and in the steppes and foot-hills of the Ukraine and the North Caucasus. This dormant energy was hardly used at all prior to the Revolution.

In 1913, Russia produced 17 million cubic metres of gas or 970 times less than the U.S.A. and 370 times less than Britain.

But already then Lenin perspicaciously pointed to the immense possibilities of using gas in industry. He wrote that it would bring about a revolution in the technology of production, and that this hygienic fuel would improve labour conditions and expedite "the conversion of dirty, foul workshops into clean and bright laboratories worthy of man."

Gas is now burning not only in the kitchens of dwellings but also in the furnaces of numerous industrial enterprises: it smelts steel in open-hearth furnaces, hardens metal in thermal shops, bakes biscuits at confectioneries and moves cars. Man has enlisted into his service



not only natural gas from purely gas deposits but also industrial gases obtained during the extraction and refining of oil, during the gasification of solid fuel (coal and shale).

Gas does not as yet play a big role in the country's power balance because Soviet industrial enterprises began using it only after the war while in the U.S.A. the extraction and utilization of natural gas has a history of nearly a century.

The building of the Saratov-Moscow gas pipeline marked the beginning of the extensive use of gas in households and in industry and agriculture.

In the ten years since this firstling of the Soviet gas industry was built it has carried more than 5,000 million cubic metres of gas to Moscow and other cities. According to the most modest estimates, this has saved an amount of coal whose transportation by rail would require a train as long as the distance between Moscow and Vladivostok.

Today gas, which is not only the most convenient but also the cheapest fuel, goes, in addition to Moscow, to Leningrad, Kiev, Dnepropetrovsk, Kuibyshev, Rostov-on-Don, Kharkov and many other cities.

It has been calculated that to boil one litre of water we need: 10-11 kopeks' worth of firewood, 5-6 kopeks' worth of kerosene or one kopek's worth of gas.

Gas is eight times cheaper to produce than coal.

Here are some of its other advantages over solid fuel:



it releases many workers who would otherwise have been engaged in transporting and storing coal and in tending fire-chambers, furnaces and boilers;

in heating boilers and furnaces the thermal energy of gas is used up 20-30 per cent more fully than that of coal;

considerably less metal is needed to make boilers working on gas.

No wonder that back in the 19th century the eminent Russian scientist Dmitry Mendeleyev sought ways of converting coal into combustible gas. He hit upon the brilliant idea of using the calorific capacity of coal without bringing it to the surface, by simply setting fire to the coal deposit and pumping the necessary amount of air into it. This allows the coal to be channelled directly from the ground into furnaces in the shape of combustible gas.

But these "professorial dreams," as the Russian industrialists called Mendeleyev's daring projects, did not materialize until Soviet times.

A coal deposit was set alight for the first time in the world on April 3, 1933. This happened at Krutovka in the Moscow Coal Basin, and then at Shakhty, Lisichansk, Leninsk-Kuznetsky and Gorlovka.

On February 4, 1938, gas obtained from the gasification of coal under the ground was used in industry for the first time in the history of world engineering.

Near Moscow there is an underground gasification station that has been producing 1,200,000 cubic metres of gas a day for more than 15 years.

Compared with mining, the advantages of underground gasification (at big stations) are:

the cost of thermal energy drops 2-3 times,

labour productivity rises 3-5 times.

Moreover, a great amount of precious human labour is saved. Coal does not have to be hewn, loaded into cars, hoisted out of deep pits, graded, transported over enormous distances, stored, fed to boilers, shovelled into furnaces.

New underground coal gasification stations are under construction:

at Shatsk, Moscow Coal Basin. This will be the first big combined enterprise where with the aid of gas turbines the thermal energy of coal, obtained without the application of human labour, will be converted into the most convenient form of energy—electric power;

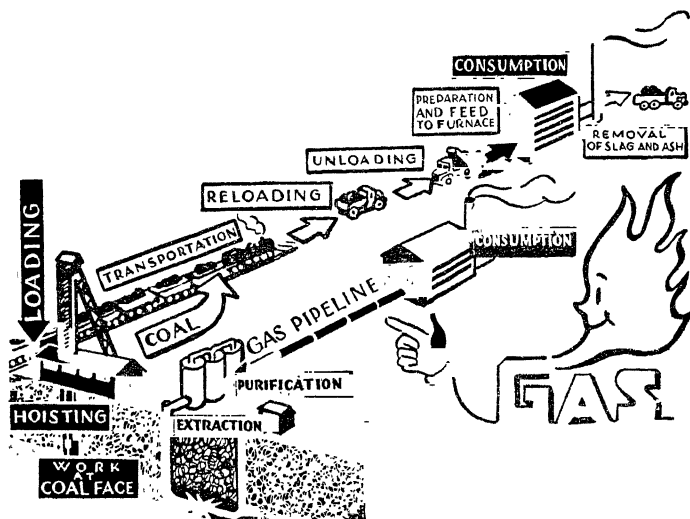
at Angren, in Central Asia. This station will annually produce nearly 2,500 million cubic metres of gas, which is equivalent to mining 700,000 tons of Angren coal. A mine of this capacity would have needed close to 2,000 workers, most of them on underground jobs. At the station the work of this host of miners will be done by a considerably smaller number of skilled workers doing only surface work.

In the U.S.S.R., high-calorific gas is also produced through the thermal treatment of combustible shale at gas-shale works.

These are only the first steps of the Soviet gas industry, which is steadily growing and becoming stronger.

By 1965, the output of gas will rise to 150,000 million cubic metres.

ADVANTAGES OF UNDERGROUND GASIFICATION OVER MINING



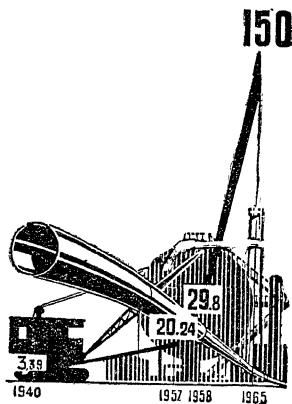
Hundreds of power stations, iron and steel works and cement plants will be switched over to this cheap and convenient fuel. Gas will flow to rural localities—to livestock farms, to hot-houses and hotbeds, to machine and tractor and maintenance and repair stations. Almost 200 towns and big workers' settlements with an aggregate population of nearly 40 million people will be receiving gas by 1960.

Approximately 26,000 kilometres of gas pipelines with branches running to towns and cities will be built within the next seven years as part of the single gas supply system that is being created in the Soviet Union.

LAND OF ELECTRICITY

All forms of energy can be converted into a single synthetic form just as in mathematics different values are reduced to the same denominator when they have to be compared. In the case of the energy of steam, water, the wind or even

GAS OUTPUT
(000 million cu. m.)



the atom, this denominator is electric power, the most perfect form of energy of modern times and the best form in which all natural power resources can be used.

Electricity has not only brought man light but it has also brought about an unprecedented acceleration of production processes and a rise in labour productivity, and has opened up tremendous opportunities for technical progress. It ushered in an epoch marked by the mass use of electric machinery, an epoch of automation.

Modern economy cannot exist without electricity. That is why Lenin characterized communism by the classical formula of: "*Communism is Soviet power plus the electrification of the entire country.*"

Lenin dreamed of converting Russia into a land of electricity back in the days when Soviet power was set up, when Russia had not yet recovered from the wounds inflicted by two severe wars. The famous GOELRO Plan, the plan for the electrification of Russia, which envisaged increasing the power output to 8,800 million kwh. in the course of 10-15 years, was drawn up on his initiative in 1920. A sheet of paper inserted into the text of the plan contained a drawing of a big heart with the inscription "Electrification" and with lines leading to five squares, each of which denoted a vital requirement of the people: housing, food, clothes, transport and culture. Such was the eloquent explanation of the purpose of the electrification plan. Many people considered it fantastic.

H. G. Wells, the well-known English novelist, met Lenin and spoke with him about the GOELRO Plan and this is what he wrote:

"For Lenin, who like a good orthodox Marxist denounces all 'Utopians,' has succumbed at last to a Utopia, the Utopia of the electricians.... But their application (of projects for such an electrification—*Ed.*) to Russia is an altogether greater strain upon the constructive imagination. I cannot see anything of the sort happening ... but this little man at the Kremlin can."

Yes, Lenin could picture Russia as a land of electricity because he was the leader of the Revolution and knew what feats could be accomplished by a people that had liberated itself from exploitation and had taken its destiny into its own hands.

Time proved to be the best judge. The GOELRO Plan was carried out within a short period. Wells' "time machine" proved to be unable to look ahead for as short a time as 10 years: the outstanding visionary was accustomed to the scales and speeds of the capitalist reality around him and those were inapplicable to the conditions produced by the socialist system.

Since then the country has taken a gigantic leap forward.

OUTPUT OF ELECTRIC POWER

(000 million kwh.)

1913	1.9	1950	91.2
1940	48.3	1957	209.7

The Soviet Union became Europe's biggest and the world's second biggest producer of electric power as early as 1950. Compared with 1913, the output of electric power increased more than a hundred-fold in 1957.

A total of 233,000 million kwh. of electric power was generated in the Soviet Union in 1958. The annual rate of increase alone, which exceeds 23,000 million kwh., is equivalent to almost three GOELRO plans or to the combined annual output of Belgium and Finland.

By 1965 this rate of increase will make the Soviet Union 1,000 times richer in electric power than it was in 1920, for it will be producing 500,000-520,000 million kwh. of electricity annually.

The next seven years will thus be a decisive stage in carrying out Lenin's idea of complete electrification.

The more long-range prospects are that by 1972 the Soviet Union will annually be producing 800,000-900,000 million kwh. of electric power or 4 times more than in 1957, which is equivalent to 100 GOELRO plans. This means that nearly 4,000 kwh. of electricity will be generated per person, an amount which is enough to:

produce 40,000 metres of fabrics,

or 8,000 pairs of shoes,

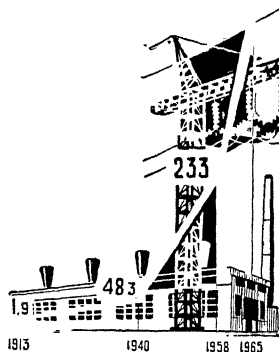
or extract 10 car-loads of coal,

or manufacture 20,000 electric bulbs,

or drive an electric passenger train from Moscow to Voronezh.

ELECTRIC POWER
(000 million kwh.)

500-520



4,000 kwh



★ **MOSCOW**

VORONEZH



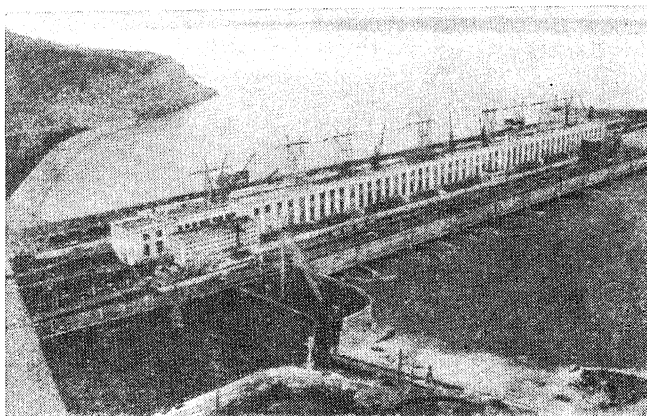
To produce such a huge quantity of electric power a country must have hundreds of big power stations. In the U.S.S.R., over 81 per cent of the electricity is generated by thermal power stations, which at the same time are centres of heat supply.

Forty years ago a 15,000-20,000 kw. power station was regarded as a giant, but the economical thermal power stations that are being designed, built and commissioned today have a capacity of up to 2 million kw. while some are even bigger than that. In Siberia a 1,200,000 kw. thermal power station is under construction at Nazarovka, and another, just as big, at Belovo, Kemerovo Region. Huge thermal power stations are being built in the Ukraine, at Zmiyevka and on the Dnieper. The big Sredne-Uralsk, Nizhnaya Tura, Troitskoye and other thermal power stations represent the last word in power engineering. They are situated chiefly in the Eastern regions, close to rich deposits of coal and on major water-ways. Each of these power stations daily consumes tens and hundreds of car-loads of coal. The water required to cool the turbine condensers and to satisfy the other requirements of these thermal power stations is equal in volume to several rivers such as the Moskva.

Super-high pressure and temperature machinery is installed at the new thermal power stations and 200,000 and 300,000 kw. turbines are built for them. A giant, 600,000 kw. turbine is in blue-print stage.

Nuclear power stations are springing up in areas where power resources are limited.

Soviet hydro-power engineering, whose history goes back 30 years, to the building of the 56,000 kw. Volkhov Hydro-Power Station, has likewise entered upon a period of intensive development. In 1932 the U.S.S.R. passed a crucial test in the building of big hydro-power stations, for that year witnessed the commissioning of the Dnieper



Volga Hydro-Power Station

Hydro-Power Station which was the biggest in Europe for almost a quarter of a century.

Today we have a big series of record size hydro-power stations. The hoary Dnieper was compelled to cede the leadership to the Volga in 1956, when the lights of the Lenin Hydro-Power Station came on. Reaching its full capacity of 2,300,000 kw. in 1957, this station eclipsed the famous 1,974,000 kw. station at the Grand Coulee Dam in America to become the biggest power station in the world. The first unit of the Stalingrad Hydro-Power Station, whose top capacity will be 2,310,000 kw., was placed in operation in 1958. A still bigger plant, the 3,600,000 kw. Bratsk Hydro-Power Station, is scheduled to be completed in the near future.

Cascades of hydro-power stations are making it possible to link up the basins of rivers and to solve the great problem of creating a single water economy system in the Soviet Union. When that is done there will not be a single water-hungry area in the country, for then the 14 seas washing the shores of the U.S.S.R., and three oceans—the Pacific, the Arctic and the Atlantic—will be inter-connected.

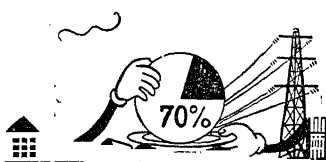
In the next few years, side by side with the building of big hydro-power stations, much attention will be devoted to thermal power stations whose construction requires less time and means and secures the maximum time advantage in the competition with capitalist countries.

All the electric power obtained in the U.S.S.R. from different energy sources—solid and liquid fuel, gas, “white coal”—is merged into a “common pool” as district and inter-district power systems, which deliver it to consumers in town and countryside.

The first section of the single power system in the European part of the Soviet Union will be completed in 1960. Its major component, a 420,000 volt transmission line, carries the power generated by the Lenin Hydro-Power Station to Moscow. This line, which is more than 900 kilometres long, annually transmits 6,100 million kwh. of electricity. A similar line running from the Lenin Hydro-Power Station to the Urals is nearing completion, and a 500,000 volt line from the Stalingrad Hydro-Power Station to Moscow and the Donbas is under construction. A single power grid is now taking shape in Central Siberia. In something like 10 or 15 years it will join hands with its elder sister, the power system in the European part of the U.S.S.R., and together they will form the single power system of the Soviet Union.

Every new step in the development of Soviet engineering and industry is accompanied by an increase in the consumption of electric power and therefore requires that power stations be built at an accelerated rate. Electrotechnological processes are ousting old production methods and helping to create new industries (electrometallurgical, electrochemical, etc.) whose products possess formerly unknown properties.

Soviet industry is now consuming more than 70 per cent of the electric power generated in the country.



The Soviet national economy today uses up:



nearly 25 kwh. of electric power to mine 1 ton of coal,



more than 30 kwh. to extract 1 ton of oil,



100 kwh. to produce 1 ton of cement,



20,000 kwh. to produce 1 ton of aluminium,



5,000 kwh. to manufacture 1 tractor,



2,000 kwh. to make one passenger car,



60,000 kwh. to make one diesel locomotive.

A modern iron and steel works has a big power economy. It consumes up to 30,000 kwh. of electric power per worker annually, while at an electric steel plant this figure rises to 125,000 kwh. Almost the entire personnel at a modern aluminium plant consists of power specialists.

Electrification has raised agriculture and the railway transport up yet another rung of the technical ladder.

Electricity is finding an increasing number of uses in the life of Soviet people. When we put on a new suit, cut a loaf of fresh bread or simply pour a cup of tea we never give a thought to how much electric power was consumed to place these things at our disposal.

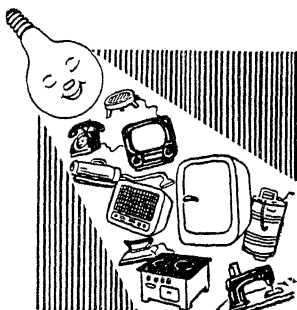
At least 5 kwh. of electricity goes into the making of a suit. The outlay of electric power for bread, from the preparation of the seeds to the baking of the loaf, makes up the sizable amount of 1 kwh. per 3-10 kilograms of bread. Moscow's drinking water comes from the Volga and it is purified and pumped along the pipes by electric motors. The capital's water-supply system annually consumes 25 kwh. of electricity per inhabitant. Almost a million kwh. of electricity are required to build a house of 120 apartments with a total floor space of 4,500 sq. m. and when such a house is tenanted the electricity that is consumed likewise amounts to the impressive figure of nearly 500 kw.



Electric lighting, radio receivers and telephones became commonplace in the U.S.S.R. long ago. Expansion of the power-generating resources is allowing the country considerably to extend the uses of electricity in everyday life. This is of nation-wide importance because household chores take up almost half of people's energy and time.

The electric refrigerator and washing-machine, the electric sewing-machine and vacuum cleaner, the electric shaver and the electric iron make for ideal conditions of hygiene, safety and mechanization in the household.

Thus is Lenin's idea of a land of electrification gradually being brought to life. Like beacons, hundreds of electric power stations are illuminating the Soviet Union's path to communism.



TOILING ATOM

The world's reserves of mineral fuel are limited and it is unlikely that they will last for several centuries even at the present rate at which coal, oil, peat and natural gas are expended. The world's power requirements are growing continuously and this is the very factor that is compelling man to look for new sources of energy.

Not long ago science discovered and engineering harnessed a powerful source of energy, which has been named atomic or, to be more exact, nuclear power.

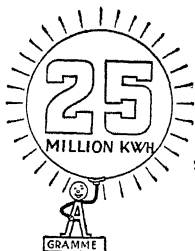
People learned of the existence of this energy more than 50 years ago when the phenomenon of radioactive disintegration was discovered. As one gramme of radium disintegrates it releases 2,800,000 large calories, a quantity big enough to heat 28 tons of water from 0°C. to 100°C. To obtain this amount of heat we must burn 350 kilograms of the best kind of coal. However it takes radium 2,280 years to release this energy and for that reason it cannot be put to practical use.

A method of splitting nuclei into elementary particles was developed in 1939 and that sparked off the investigations in the sphere of atomic power.

Nuclear energy lies concealed in tiny particles of matter—atoms—in their nuclei.

A gramme of any substance harbours 25 million kwh. of this energy.

All the electric power generated in the Soviet Union in 1957 is contained in 8 kilograms 400 grammes of water, air, clay or sand!



People have learned to release and utilize only a part of the atomic energy of four natural substances: uranium, thorium, hydrogen and lithium. At present the only substance that can be used as a direct source of atomic energy for peaceful purposes is the isotope of uranium with a mass of 235. Two other kinds of atomic fuel that are suitable for peaceful uses can be prepared artificially, and these are plutonium 239 (obtained from natural uranium 238) and uranium 233 (obtained from thorium 232).



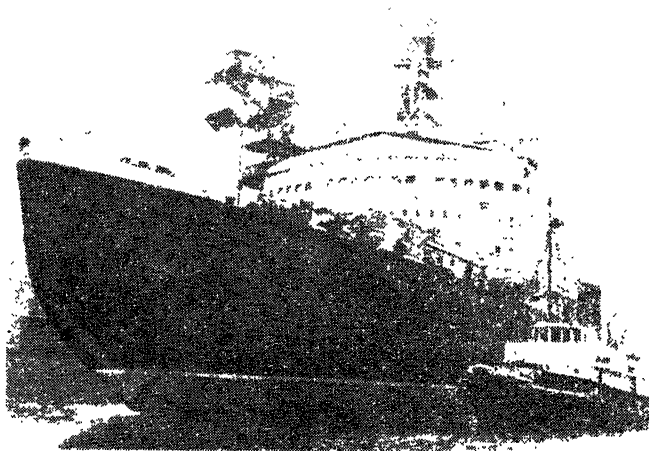
A gramme of uranium 235 produces as much energy as 2.5 tons of the best coal (nearly 20,000 kwh.). The known reserves of uranium contain approximately ten times more energy than the known reserves of coal and oil taken together.

So far science is able to derive only a thousandth part of the atomic energy of uranium and thorium and a hundredth part of the atomic energy of hydrogen and lithium.

A gramme of hydrogen yields 9 times more energy than a gramme of uranium 235, but to release this energy hydrogen has to be heated



Nuclear power station



Atomic ice-breaker *Lenin*

to tens of millions of degrees and this temperature has to be sustained for a prolonged period. But this is still outside the scope of science. So far the explosion of a hydrogen bomb is the only form of harnessed thermonuclear reaction. When scientists find a way of controlling thermonuclear reaction mankind will never again have to worry about the supply of energy, for the earth's reserves of hydrogen isotopes, which are the chief fuel of thermonuclear reaction, are, practically speaking, inexhaustible.

The peaceful uses of atomic power are developing in two directions: power (nuclear power stations and motors) and non-power (application of radioactive substances and their radiation).

The Soviet Union leads the world in the peaceful uses of nuclear energy.

The world's first industrial nuclear power station with a capacity of 5,000 kw. and an efficiency of 16.7 per cent began to operate in the U.S.S.R. on June 27, 1954. The atomic reactor of this station contains 550 kilograms of uranium of which 5 per cent is uranium 235. Its daily consumption amounts to only 30 grammes and the fuel is partially replaced once every two months. The experience that has been accumulated in operating this station is of immense scientific value and serves as the foundation for designing other, bigger nuclear power stations. The commissioning of this station is justifiably regarded as the beginning of the new, atomic age in the history of power engineering.

In the next few years the aggregate capacity of the nuclear power stations of the U.S.S.R. will substantially increase as compared with all the power capacities built under the GOELRO Plan.

Several 400,000-600,000 kw. industrial nuclear power stations, each designed differently, are under construction.

The first section, 100,000 kw., of one of these began generating electricity in September 1958. When completed this station will have a capacity of nearly 600,000 kw.

In addition, the Soviet Union is building 50,000-70,000 kw. experimental nuclear power stations, including a station whose reactor will yield more nuclear fuel than it will burn.

Nuclear power stations have a number of advantages over other kinds of thermal power stations (low fuel consumption, simplicity in transporting fuel, automation of all processes, preservation of coal and oil supplies which are the most valuable raw materials for the chemical industry, etc.). These power stations will play an increasing role in the Soviet Union's fuel pattern.

Nuclear power can also be used successfully in the transport. The enormous concentration of this energy in substances allows long journeys to be made without refuelling. An example of this is the 16,000-ton Soviet atomic ice-breaker, the *Lenin*. Its motors develop 44,000 h. p., which is double the power of the biggest diesel ice-breaker built in the U. S. A., the *Glacier*. It burns something like 150 grammes of fuel a day and can sail without refuelling for at least a year. An ordinary, 10,000 h. p., ice-breaker uses up 120 tons of coal a day and cannot sail for more than a month without refuelling.

Various radioactive substances, which are also prepared in atomic reactors, are being broadly used in science and in the national economy. To give an idea of the vast possibilities that are opening up for the application of radioactive substances we need only mention that they are already helping to check the quality of manufactured goods, accelerate production processes, evolve new varieties of useful plants and treat malignant tumours, goitre and diseases of the blood. Until recently, radium, a very rare and expensive metal, was the chief source of gamma-rays that destroy cancer cells. The total quantity of this metal on hand throughout the world hardly amounts to a single kilogram. In the U.S.S.R. there are now quite a number of GUTSO-400 apparatuses, each of which produces the same quantity of gamma-rays as 400 grammes of radium.

The Soviet Union rapidly mastered the production of different kinds of atomic and hydrogen weapons. Though armed with these weapons, the U.S.S.R. is consistently seeking for a discontinuation of nuclear weapon tests, a complete ban on the production and utilization of these weapons and the destruction of the existing stockpiles. In this struggle the U.S.S.R. has the support of the overwhelming majority of the people in the world.

The Soviet Union has entered the atomic age. The plan for the next few years envisages a substantial extension of the peaceful uses of atomic power and a further great leap in the development of nuclear power engineering. In socialist countries nuclear power is one of the greatest levers of technical progress expediting the rapid growth of the welfare of the entire people.

METAL

Metal, a material which combines remarkable technical properties (durability, toughness and hardness) with high economic indices, is needed in every branch of the national economy without exception. Metal means machine-tools and combine harvesters, excavators and ocean-going vessels, locomotives and aircraft, turbines and bridge trusses, rails and oil pipelines, factory equipment and the frames of buildings, tractors and consumer goods....

The U.S.S.R. has an abundance of iron ore, a raw material for the ferrous metallurgical industry of which 88,800,000 tons were extracted in 1958.

If this amount of iron ore were loaded onto one train it would be 38,000 kilometres long; if it were placed on one of the scales of a balance, the other would have to hold 17 buildings such as Moscow University.



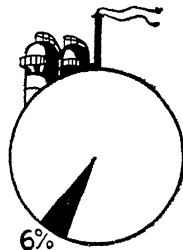
In 1913 Russia produced only 6 per cent of the world's output of ferrous metals.

That same year she smelted 7.6 times less steel than the U.S.A.,

1.8 times less than Britain, and 1.6 times less than France.

Russia's iron and steel works produced hardly any quality metal and her engineering industry was totally dependent on the import of special steels.

But even what was produced was done so at the cost of the workingmen's sweat: the foreign firms, which owned 72 per cent of the iron and steel plants in Russia, showed no inclination to install labour-saving machinery. They had cheap labour to draw on and the lower the costs the higher were their profits.



Not for a moment, night and day, in frost or heat, was there a respite in the back-breaking toil of the porters, who unloaded ore trains with shovels, and of the labourers who transported the ore and the fuel to the blast-furnaces in hand-barrows. And at the blast-furnaces where the air was full of asphyxiating gases workers tipped carts with 800-kilogram loads into the funnels of the charging machine. The ditchers and foundrymen manually prepared the foundry yard for the metal from the furnace. Rarely was there a pouring that went off without an accident. The conditions at the steel-smelting furnaces and rolling mills were just as hard.

All this gave Lenin grounds to remark bitterly:

"As regards iron, which is one of the main products of modern industry, one of the foundations, we can say, of civilization, Russia's backwardness and savagery are especially glaring."

It was from this "backwardness and savagery" that the Soviet metallurgical industry began its march forward. As a matter of fact, the advance began not from *this* but from a still greater backwardness, for 1913 was followed by the years of the imperialist war and then the years of the foreign intervention and the Civil War. In 1920 Russia no longer accounted for 6 per cent of the world output but for 6 per cent of 6 per cent. Of the 82 blast-furnaces in the South, only one showed signs of life.

In the spring of 1924, the 13th Congress of the Communist Party raised the development of the metallurgical industry to the level of one of the most important economic and political tasks of the Party and the Government.

A big metal-making industry had to be built up within a short space of time to satisfy the multiform requirements of the growing national economy and the country's defence. Few people abroad believed that the Soviet Union would win the battle for metal quickly. But the number of sceptics steadily declined when new metallurgical giants began to appear on the map of the U.S.S.R. with breathtaking swiftness.

In the period of the pre-war five-year plans, the Soviet Union built and commissioned the Magnitogorsk, Kuznetsk, Krivoi Rog, Zaporozhstal, Azovstal and other huge metallurgical plants. During the difficult war years metal began to come from plants in Chelyabinsk, Kazakhstan and Uzbekistan. When the war ended many new iron and steel works (in Cherepovets, Orsk-Khalilovo, Rustavi, Baku and other towns) were put in operation side by side with the rehabilitated plants. Giant metallurgical factories are being built in Stalinsk and in Karaganda.

In 1937 there was not a single metallurgical enterprise in the Soviet Union with a capacity of more than a million tons of pig iron a year, yet by 1957, there were 12 such plants and together they produced 77.6 per cent of the country's pig iron. Mammoth blast-furnaces with a volume of 1,513 and 1,719 cubic metres and powerful open-hearth furnaces putting out 500 tons of steel at a single melting are under construction.

Soviet steelmakers have justifiably named these open-hearth furnaces after the Russian legendary heroes Ilya Muromets and Dobrynya

Nikitich. A third giant, christened Alyosha Popovich, another hero of legendary fame, will soon be joining the first two. Many other blast- and open-hearth furnaces are being put in operation at the Cherepovets plant, at the Karaganda and Magnitogorsk works, and at the metallurgical enterprises in the Donbas, Krivoi Rog Region and Siberia, while the Stalproekt Institute is working on the design of a 2,286-cubic metre blast-furnace, the biggest in the world, which, scheduled to be commissioned in 1962, will produce 4,500 tons of metal a day.

New, powerful machinery is enabling the output of ferrous metals to grow rapidly.

As a producer of ferrous metals the U.S.S.R. stepped into the European leadership and into second place in the world back in 1940.

In 1957 the Soviet Union put out more pig iron than Britain, France and Belgium, and more steel than Britain and West Germany taken together.

The target for 1965 is 65-70 million tons of pig iron or 64-77 per cent more than in 1958; 86-91 million tons of steel or 57-66 per cent more than in 1958; 65-70 million tons of rolled stock or 53-63 per cent more than in 1958.

The Soviet Union has outpaced the leading capitalist countries for the rate of growth of the output of ferrous metals.

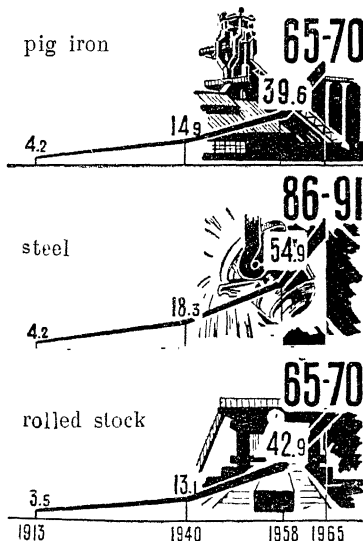
On the average, the rate at which the metallurgical industry is growing in the U.S.S.R. is 3.6 times faster than in the U.S.A.

Rates of development are expressed in percentages but behind these percentages are definite quantities of output—tons and hundreds of thousands of tons of metal. The “weight of each per cent” of the Soviet

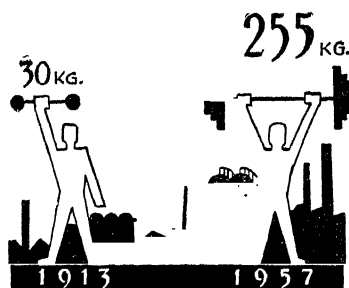
metallurgical industry increases as the output grows. In the period from 1953 through 1957, one per cent of the mean output of steel amounted to 429,000 tons in the U.S.S.R. and 1,500,000 tons in the U.S.A. But the average annual rate of increase was 7.6 per cent in the U.S.S.R. and 0.2 per cent in the U.S.A. Consequently, the mean absolute annual rate of output growth was faster in the U.S.S.R. (3,260,000 tons) than in the U.S.A. (300,000 tons).

In 1959-65 the mean annual increase in the output of steel will amount to 4,400,000-5,100,000 tons.

IRON AND STEEL OUTPUT (million tons)



GROWTH OF STEEL OUTPUT PER HEAD OF POPULATION



In Soviet years, the output of the metallurgical industry not only expanded quantitatively but also changed qualitatively. In addition to iron, manganese, copper, lead, tin, zinc and their alloys, the national economy began to make wide use of chromium and nickel, cobalt and magnesium, aluminium and calcium, tungsten, molybdenum, titanium, tantalum, antimony, beryllium, sodium, vanadium, bismuth, niobium and other metals. Production was started of germanium and silicon, which are semiconductors and if purified to a high degree can be widely used in radio engineering and electronics.

The Soviet metallurgical industry now produces heat-, acid- and alkali-resisting, magnetic, fast-cutting and other special kinds of steels. It has sharply increased its output of low-alloy steels, which are longer-wearing than ordinary carbon steel and, at the same time, not as expensive as high-alloy steel. Moreover, each steel-smelting unit produces 2.5 times more metal than 20-25 years ago.

The present Soviet figure of 7 tons of steel per square metre of hearth is 15 per cent greater than what is produced by the best American open-hearth furnaces. From the useful volume of each blast-furnace, Soviet blast-furnace operatives obtain a third more pig iron than their opposite numbers in America.

But this is by no means the limit. Soviet metallurgists are making every effort to intensify production processes. In this they are helped by science. New technological processes have been worked out and are already being applied. The following are examples picked from a long list.

In order to step up the productivity of blast-furnaces and make coke burn much faster, Soviet metallurgists are smelting steel *at an increased gas pressure in the furnace top*, i.e., they increase the pressure where the gas leaves the furnace. This allows them to heighten the blast. Special automatic devices regulate the air-heating apparatuses and keep the temperature of the blast at a uniform level.

Simultaneously with air, the steel-smelting units receive not only oxygen, which they need to produce metal, but also a large amount of useless and sometimes harmful nitrogen. A huge amount of heat is consumed by nitrogen, which makes up four-fifths of the air, and this holds up the smelting process. Dissolving in the metal, nitrogen worsens its quality. In this field as well Soviet metallurgists have found a way of improving the technological process, developing a method called *oxygen blasting*. The air blast, containing up to 28-30 per cent oxygen, intensifies the smelting and saves precious time and fuel.

Under the oxygen blasting method:
smelting time in open-hearth furnaces is reduced from 9-10 hours to 6-7 hours;

productivity rises 25-30 per cent in the manufacture of low-carbon and stainless steels;

a 185-ton furnace can produce approximately 250,000 tons of steel annually.

Oxygen-enriched air blasts are being employed with great effect in the Bessemer process of making steel. This blasting has now been introduced at two Soviet factories.

Automation of all production and auxiliary processes and the switch to continuous line production is becoming the cardinal problem connected with further technical progress in Soviet metallurgy.

Blast-furnace and rolling mill departments are already operating on the basis of this progressive principle. However, steel-smelting, which is the middle link of the metallurgical chain, defied all efforts to make it into a continuous process.

For years smelted steel used to be poured from the ladle into special forms called moulds. In these moulds the metal took several hours to harden and turn into ingots. The upper part of these ingots invariably contained defects, because shrink holes used to form in the metal as it cooled. This unsuitable part of the ingot had to be removed, the remaining piece reheated, then shingled on a blooming mill and only after that sent to the rolling mill. Thus, almost 15 per cent of the smelted steel had to be sent back for resmelting.

Soviet metallurgists worked out a new steel-smelting technology by organizing a process whereby *steel is poured continuously*. The first industrial continuous pouring installation was placed in operation in 1955 at the Krasnoye Sormovo Shipbuilding Works. This is really a wonderful machine, for while a dazzling stream of liquid metal is still pouring into its top from a ladle, finished steel work-pieces of a definite size drop out into a conveyer at its bottom. These ingots do not require shingling on a blooming mill and are sent directly to rolling sheet and section mills.

A four-machine continuous steel pouring installation, the most powerful and most productive in the world, is being built at the Stalino Iron and Steel Works in the Donbas. Pouring the steel from a 140-ton ladle, the installation can produce several hundreds of thousands of tons of slabs.

Continuous pouring immeasurably lightens the labour of the workers. It:

reduces the expenditure of metal by 9-10 per cent per ton of finished rolled stock;

increases the finished rolled stock output by the same amount;

improves the quality of the rolling.

This method obviates the need for expensive cast-iron equipment (moulds, plates, stanchions) and for such intricate and costly machines as slabbing and blooming mills.

The new Soviet method of processing liquid steel *in a vacuum* with the purpose of freeing the metal from harmful gases and obtaining high-quality ingots is of tremendous importance. The instal-

lations used for this process have been put in operation at several plants.

Soviet metallurgists are continuing their quest for ways of stepping up production. They are working on the idea advanced by D. K. Chernov, an eminent Russian metallurgist, of obtaining steel directly from ore, without having to produce pig iron first. A happy solution to this problem would do away with blast-furnaces and the need for critical coke, and the entire process of producing metal, from the delivery of the raw material to the output of the finished rolled stock, would be carried out in a single continuous stream.

INDISPENSABLE SUBSTITUTES

For a long time metal was the chief and almost the only material for many branches of industry. But Soviet years witnessed the rise of an essentially new branch of industry, chemistry, which revolutionized industrial life.

Prior to 1913, only about 30 chemical elements were used in Russia, yet today it is hard to name a chemical element that in the U.S.S.R. is not used in scientific research or in engineering.

Chemistry has found industrial uses for air, natural and industrial gases, water and sea, lake and soil salts.

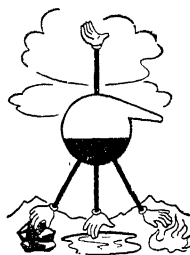
Thanks to chemical processing, combustible minerals, timber, peat, natural silicates, salts and ores are being utilized in industry to a growing extent and by increasingly economical methods.

In alliance with geology, chemistry is producing new ways of finding and isolating rare and dispersed elements in substances, of which there are enormous quantities in the earth's crust—oxygen, silicon, aluminium, iron, calcium, sodium, magnesium, potassium, hydrogen, titanium, carbon, chlorine, phosphorus and sulphur.

All this has allowed substantially expanding the output of various products made from the cheapest kinds of raw materials. In 1957 the output of the chemical industry was 112 times above the 1913 level.

At first the artificial materials produced by this industry were used as substitutes, but as science and engineering developed these materials became themselves indispensable because in many cases their properties were superior to those of natural raw materials.

The list of the new synthetic materials produced as a result of chemical synthesis is headed by *plastics, artificial and synthetic fibres, and artificial rubber.*



LIGHTER THAN CORK

Artificial plastics rival steel for toughness, but steel does not have their lightness.

The chemistry of plastics has produced super-light, porous materials—foam and porous plastics that can be made from any artificial resin. Buoyant and water-resisting, they do not decay in fresh

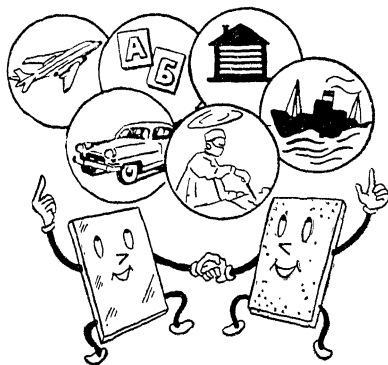
or salt water and conduct very little heat. Some foam plastics are 50-100 times lighter than water and 15-30 times lighter than cork. Because of their small volumetric weight and excellent heat- and sound-insulating properties, porous plates are an important material for the shipbuilding, engineering and aircraft industries. They can be successfully used in construction as well. Thus, foam plastics

have been utilized for the dwellings at the "North Pole" drifting scientific stations.

The Soviet national economy makes use of more than 2,000 kinds of plastics.

Let us briefly glance at some of the spheres where plastics are employed.

Cigar-shaped, two-seater racing cars made at the Likhachov Auto Works can be seen in the streets of Moscow. These cars have plastic bodies reinforced with glass thread. Plastics save the automobile industry approximately 20-25 per cent of steel and reduce the weight



of cars by scores of kilograms.

Synthetic resins reinforced with glass fibre are used for the manufacture of plastic springs, which work excellently in the temperature range of from -20°C . to $+70^{\circ}\text{C}$. and are as tough as springs made of steel.

In surgical operations on such intricate organs of the human body as the brain or heart it is very important to have instruments that are transparent and at the same time do not reflect light. Such an instrument has been made from plastics and it combines exceptional lightness and transparency. As regards its other properties, it can vie with instruments made from the best kinds of steel.

Type made from plastics has been tested at printing-shops in Moscow. This type has a longer life span than metal type (instead of 40,000 impressions, which is the limit of metal type, it is good for 150,000 impressions) and does not in any way harmfully influence the health of the type-setters. Moreover, it is half as cheap and 10 times lighter than metal type.

Calculations show that 1 ton of plastic fully replaces 3 tons of non-ferrous metal, and that 3.8 times less labour is required to make plastic articles. The employment of plastics in electrical engineering results in a tremendous saving of non-ferrous metals. One ton of cheap, easily produced cable plastics saves more than 4 tons of lead, which is in short supply.

STRONGER THAN STEEL

The most durable rope and the sheerest of stockings from the by-products of coal.... The lightest of fabrics from oil gases.... This had the ring of fantasy only a few years ago. The production of synthetic fibres—kapron, nylon, perlon, enant, lavsan—is today a major and rapidly expanding branch of the chemical industry.

We now have nearly 20 kinds of synthetic fibres with different properties. Breakage and wear tests show that the new synthetic materials are tougher than metal.

A nylon cord is not only as strong but also much lighter than wire hawsers. Besides, nylon cables are extremely elastic, so much so that they do not fear jerks and easily withstand shock loads, for example, during storms at sea.

The tear resistance of kapron fibre is 1.5 times higher than that of natural silk and 4-5 times higher than that of cotton.

The great strength of synthetic fibres, their resistance to water and decay and their low specific weight make them irreplaceable as material for the production of parachute silk, fishing nets (that serve several times longer than flax nets), aircraft and automobile cord, electric insulation and filter fabrics. New kinds of synthetic fibres are also used for the manufacture of stockings and various fabrics, knitted garments and carpets, lace and, lastly, fur,

which for its quality and appearance can vie with the most expensive natural furs.

The utilization of synthetic fibres in the light industry yields a considerable saving not only of natural material but also of labour. One ton of fibre from washed wool requires an outlay of 624 man-days, from flax 463 man-days and from cotton 238 man-days, but only 70 man-days are required to manufacture 1 ton of artificial fibre.

BETTER THAN NATURAL RUBBER

The U.S.S.R. State Museum of the Revolution has a sample of the world's first synthetic rubber. It was made in the Soviet Union on an experimental factory installation in 1930. Two years later the Soviet Union commissioned the world's first factory producing synthetic rubber from ethyl alcohol by a method worked out by the Russian academician, S. V. Lebedev.



At present the U.S.S.R. produces tens of different kinds of artificial rubber with the most diverse properties.

They not only fully replace natural rubber but possess new, important technical properties: resistance to high temperatures, elasticity at low temperatures, resistance to swelling in benzine, and so forth. Some synthetic rubber materials work reliably at temperatures up to $+300^{\circ}\text{C}$.

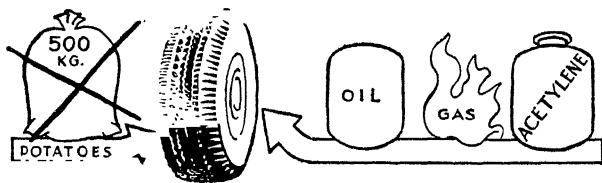
Formerly, ethyl alcohol, obtained from food products (potatoes, maize, wheat), was the only raw material for synthetic rubber. Soviet scientists and engineers have worked out and applied methods of producing synthetic rubber from oil and natural gases, of which there is an unlimited supply in the U.S.S.R.

The same quantity of artificial rubber can be produced from 0.7 ton of natural ethylene gas as from a ton of ethyl alcohol obtained from potatoes or grain. The production of one ton of alcohol from grain uses up 160-200 man-days, whereas only 10 man-days are needed to obtain the same amount of alcohol from oil gases. Moreover, capital investments for the production of one ton of ethyl alcohol run into:

4,000 rubles when it is obtained from gases accompanying oil; and 9,350 rubles when it is obtained from farm raw materials (this takes account of farming expenses).

LESS FARM RAW MATERIALS FOR TECHNICAL REQUIREMENTS

Another advantage of the new kinds of raw materials for the production of rubber is that they make it possible to effect a drastic cut in the consumption of farm raw materials for technical purposes. Until recently 2.2 tons of ethyl alcohol derived from approximately 8-9 tons of rye or 22 tons of potatoes were required to produce one ton of synthetic rubber.



Thus, an automobile tyre used to cost the state half a ton of potatoes or nearly 200 kilograms of grain.

The switch to the production of technical alcohol from oil, sawdust and paper mill waste (cellulose liquor sulphide) is saving millions of tons of foodstuffs.

For a long time about a third of the vegetable oil output in the Soviet Union used to go into the manufacture of household soap. Synthetic substitutes have now come to replace natural fats in the soap-

making industry. Synthetic washing agents are far superior to soap made from natural fats.

One ton of synthetic washing powder produced from oil or natural gas waste saves close to 700 kilograms of natural fat. Besides, it costs 4 times less than a ton of 60 per cent household soap.

The further development of the manufacture of washing agents and fats substitutes will not only redirect a huge quantity of fats for food purposes but will also yield a considerable cash saving. To obtain 30,000 tons of sunflower-seed oil for the soap industry, more than a million hectares of land must be sown to sunflowers with a manpower outlay of nearly 100,000 workers, not counting tens of thousands of tractors, combine harvesters and trucks. In addition, there must be several refineries and hydroplants to convert sunflower-seed oil into the solid state necessary for making soap.

This is only one example of the complex utilization of raw materials by means of chemistry. The problem of extending these uses is being successfully solved in the Soviet Union's planned socialist national economy. For instance, the chemical industry has developed a method whereby mineral nepheline simultaneously yields aluminium, high-quality cement, sodium, potash and gallium, a fusible metal with a remarkably low melting point.

The utilization of semi-conductors is closely linked up with the chemistry of rare elements. These materials, which occupy an intermediary position between conductors of electricity (metals) and insulators, have been known for a long time but the peculiar features of their properties and the possibilities issuing from this of using them attracted the attention of investigators only recently. Yet today semi-conductors have won an important place for themselves in radio engineering, automation, signalling and illumination engineering.

PROGRAMME OF PLENTY

The Soviet Union now holds second place in the world for the total output of the chemical industry, but this output does not fully satisfy the requirements of the Soviet national economy.

The country has every opportunity of erasing the still existent relative backwardness of its chemical industry. Nature is generously throwing open her storehouses to chemists. The Soviet Union has the world's biggest reserves of various raw materials for the chemical industry. The growth of the oil and natural gas output earmarked for the next few years will allow establishing a practically unlimited base for the broad development of many branches of the chemical industry.

A far-reaching programme envisaging an accelerated expansion of the chemical industry was drawn up in 1958 on instructions from the Central Committee of the C.P.S.U. More than 100,000 million rubles have been appropriated for the further expansion of this industry in the next few years.

By the close of 1965, the total output of the chemical industry will be three times as big as in 1958. This means that the Soviet Union

will be producing considerably more fabrics, knitted garments, artificial fur and footwear; that a tremendous quantity of food will be saved for consumption by the people.

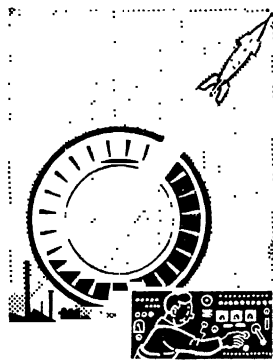
More than 270 chemical enterprises will be built or reconstructed in order to ensure the fulfilment of this programme.

The wonderful discoveries of modern science coupled with the purposeful activity of the Party and the people will allow creating an abundance of material blessings in the country and to draw nearer the dawn of communism.

MACHINES

Machine-building is the gate through which technical progress enters industry.

The world's biggest jet airliners, the world's best turbodrills, nuclear power stations, inter-continental ballistic rockets, artificial Earth and Sun satellites and other achievements of Soviet engineering rest on a developed machine-building industry which supplies science and industry with millions of the most diverse machines and instruments. It is hard to believe that there is such a powerful engineering industry in a country, which less than half a century ago was, as Lenin put it, incredibly, unprecedently backward, poor and savage, with four times fewer modern means of production than Britain, five times fewer than Germany and ten times fewer than America.



In 1913 the output of the engineering factories in Russia, most of which were owned by foreigners, amounted only to 6.3 per cent of the total output of the large-scale industry. Of the stock of machines in operation only 44 per cent were Russian-made and of these 23 per cent were textile machines and 13 per cent steam-driven machinery. Many factories (automobile, sewing-machine and farming machine) limited themselves to assembling machines imported from other countries.

The rise of the Soviet engineering industry dates from the historic decisions of the 14th C.P.S.U.(B.) Congress (1925), which set the task of transforming the Soviet Union "from a country importing machines and equipment into a country producing machines and equipment...."

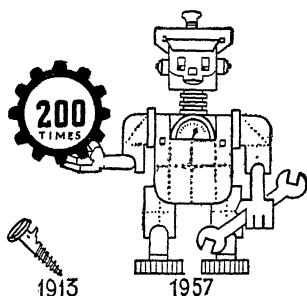
For its technical equipment and production potential the machine-building industry became a leading branch of the national economy during the period of the First Five-Year Plan.

In 1932 it became the biggest producer among the major branches of industry in the U.S.S.R. Tractor, automobile, machine-tool and aircraft industries arose.

The result of successful socialist industrialization, of which the machine-building industry was the chief link, was that for the output of machines the Soviet Union had by 1937 no rival in Europe and held second place in the world.

The years that followed were marked not only by a further rapid increase in the output of the engineering industry but also by a sharp rise in the power of the machines, their speed, precision, reliability and economy, by a swift expansion of the scientific base of the engineering industry, by an increase in the number of scientists, engineers and skilled workers.

Prior to the Revolution, this industry was concentrated primarily in Moscow and Petrograd. Today it has spread out to the Ukraine,



the Urals, Siberia, the Transcaucasus, Central Asia, the Soviet Far East and the Baltic republics. Hundreds of Soviet towns are famous for the fine machines they produce. The whole world is familiar with Moscow machine-tools, Leningrad turbines, Sverdlovsk drag-lines, Gorky automobiles, Chelyabinsk tractors, Rostov harvester combines and Riga electric locomotives.

In 1957, the output of the machine-building and metal-working industries was more than 200 times greater than in 1913.

The engineering industry had reached such a level of development by 1957 that in a single hour its enterprises produced an average of:

230 electric motors,	32 tractor seeders,
15 metal-cutting lathes,	2 drag-lines,
56 automobiles,	2 looms,
23 tractors,	43 washing-machines,
15 grain combine harvesters,	262 sewing-machines, etc.

Every two days in 1957, the machine-building works put out more products than pre-revolutionary Russia could manufacture in a year.

It is planned to approximately double the output of the machine-building and metal-working industry within the coming seven years. Development will proceed at a particularly high rate in branches of the industry such as heavy machine-building, instrument-making, radio electronics, electrical engineering and machine-tool building.

CORE OF THE HEAVY INDUSTRY

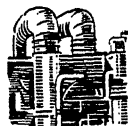
Much as the work of all branches of the national economy without exception depends largely on the level of development of the heavy industry, which supplies them with metal, power and machines, so

does the heavy industry itself depend on its core—machine-building. Soviet *heavy and power machine-building* supplies all branches of the heavy industry with the necessary equipment and machines.

The metallurgical industry receives from it cranes, hoisting machinery, charging machinery for blast- and open-hearth furnaces, teeming machines, blooming mills, and rail and structural steel, rolling and pipe rolling mills. Every 40,000 tons of this equipment allows increasing the metal output by 1,000,000 tons.

**GROWTH OF OUTPUT OF
METALLURGICAL EQUIPMENT**
(thousand tons)

1940	1950	1958
23.7	111.2	173



Thanks to the production of intricate oil equipment, oil extraction was a highly mechanized process in the U.S.S.R. already in 1937.

**GROWTH OF OUTPUT OF OIL
EQUIPMENT**
(thousand tons)

1940	1950	1958
15.5	47.9	72.7



Under the plan for 1959-65, the primary oil refining capacities will increase 2.2-2.3 times, catalytic cracking capacities 4.7 times, catalytic reforming capacities 16-18 times, and the output of oils 2 times.

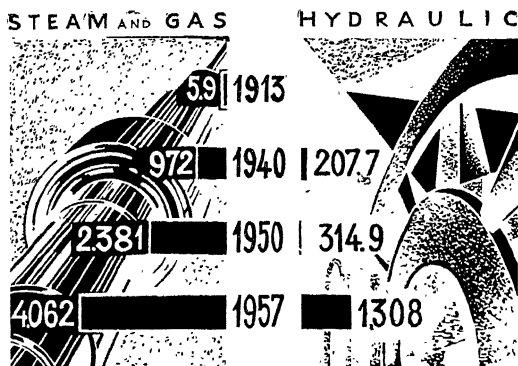
The production of power equipment has risen to a new level in the post-war years. The Soviet Union is putting out 100,000, 150,000 and 200,000 kw. turbogenerators, the world's best steam, gas and hydraulic turbines whose average power in 1957 increased 116 times compared with 1924. For example, the top capacity of each turbine installed at the Lenin Volga Hydro-Power Station adds up 126,000 kw. The amount of water flowing through the rotor of each of these turbines every hour is enough to fill a lake 2.5 square kilometres in area and 1 metre deep.

By 1965 the output of turbines, in terms of million kw., will reach the figure of 18.7-20.4.

Soviet machine-builders have already placed gas turbines in the service of aviation. In fast and long-range aircraft air-jet gas-turbine and turbo-prop engines have ousted the piston motor. Science is now working on the problem of introducing gas turbines for power stations. The Leningrad Metal Works has already started producing powerful stationary gas turbines, which will operate on underground gas.

Soviet machine-building is the faithful servant not only of the heavy industry. All forms of transport and the technical equipment of the Soviet Army depend on *transport machine-building, shipbuilding and the automobile and aircraft industries.*

GROWTH OF OUTPUT OF TURBINES
(thousand kw.)

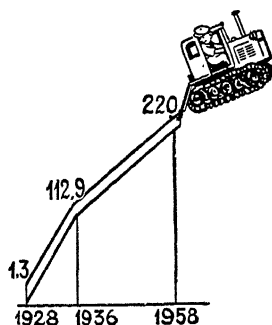


**GROWTH OF THE OUTPUT OF THE TRANSPORT MACHINE-BUILDING
AND AUTOMOBILE INDUSTRY**

(single units)

	1913	1940	1950	1958
Diesel locomotives	—	5	125	712
Electric locomotives	—	9	102	344
Automobiles (1,000)	—	145.4	362.9	511
trucks and buses	—	139.9	294.4	389
passenger cars	—	5.5	64.6	122

GROWTH OF OUTPUT OF TRACTORS
(thousands)



The tractor and farm-machine industry is annually producing hundreds of thousands of machines that are raising the technical level and efficiency of socialist farming. They include combines that harvest wheat and maize, potatoes and sugar-beet, flax and cotton, and machines that plough the soil, sow, weed, prepare feed for livestock, milk cows, and water plants.

GROWTH OF OUTPUT OF THE FARM-MACHINE INDUSTRY (thousands)

	1940	1950	1955	1957
Tractor ploughs	38.4	121.9	103.2	128
Seeders	21.4	118.4	123.3	278
Tractor cultivators	32.3	98.9	112.6	208
Grain combine harvesters	12.8	46.3	48.0	131
Sugar-beet harvester combines	—	1.7	7	8.6
Silo harvester combines	—	—	7	54.2
Maize harvester combines	—	—	4	31.4

The plan for the next seven years provides for an output of more than a million tractors, close to 400,000 grain combines and a large quantity of other farming machines and equipment.

Building sites and projects in the U.S.S.R. use more than 1,000 kinds of machines produced by the *building and road machine industry*. These excavate the soil, dig ditches, prepare and lay concrete, crush rock, weld steel structures, plaster walls and ceilings, and convey bricks and staircases, concrete solutions and all the other necessary details and materials at building sites. Giant drag-lines each of which does the work of more than 10,000 navvies, have won world fame.



GROWTH OF OUTPUT OF BUILDING AND ROAD MACHINES (single units)

	1940	1950	1957
Excavators	274	3,540	9,540
Bulldozers	118	3,788	10,464

MACHINES THAT MAKE MACHINES

The growth of the output of machines, improvements in their design and the utilization of the latest technology in manufacturing them depend primarily on the level of the *machine-tool industry*, the leading branch of the industry producing machines that make machines.

This major branch of the engineering industry was almost non-existent prior to the Revolution. All machine-tools that were in any way difficult to make used to be imported. In 1913 Russia produced altogether only 1,490 of the simplest kinds of machine-tools—lathes, and drilling and slotting machines, which made up not more than one per cent of the cost of the machine-building output. By 1933, the beginning of the Second Five-Year Plan, the U.S.S.R. was producing 55 types of machine-tools, in 1940 it was manufacturing more than 500 types of machine-tools and in 1950 this figure rose to close on 2,000. Today the machine-tool industry is producing several thousand

special kinds of machine-tools and 847 types of general purpose machines. In 1957 the Soviet Union had 1,840,000 machine-tools in operation and today it is second only to the U.S.A. as regards the stock of these machines.

Since the rise of the machine-building industry cutting has become the basic method of making machine parts.

OUTPUT OF METAL-CUTTING LATHES (thousands)



But in itself the principle of working metal by cutting it, a method under which a large part of the worked metal is converted into shavings, contradicts the principle of economizing on metal. In addition, many alloys with remarkable magnetic properties do not lend themselves to cutting and magnets of the required shape can be made from these alloys only by first casting and then grinding them. The existing methods of metal-cutting force factories to adapt machine-tools to big loads, to make them very bulky. A great deal of money and labour is spent on the production and then on the inevitable regrinding of highly efficient tools.

The requirements of the day have demanded an improvement of the processes of metal-cutting and more progressive methods of manufacturing machine parts.

Soviet scientists have developed new, original methods of working metals with the aid of electric current. These methods allow the hardest and toughest metals to be worked easily and very small diameter apertures to be made in any details accurately and rapidly. They

enable machine-builders to carry out many processes which were beyond their scope only a few years ago.

Compared with mechanical cutting, electrical cutting increases labour productivity more than 50 per cent and considerably reduces the consumption of metal.

The introduction of modern methods of precision casting and the production of forge blanks was another factor that contributed towards a reduction in the outlay of metal and a rise in productivity.

One of the basic trends in the development of the Soviet engineering industry has in recent years therefore been to give the growth of the output of forge and press machines and foundry equipment priority over the growth of the output of metal-cutting lathes.

Recent years have witnessed a particularly marked increase in the output of powerful hydraulic, mechanical forging-and-stamping and calking presses, horizontal forging machines and fitting automats, including automats in which the metal is heated by electricity.

Forging and stamping possess a number of essential advantages over other methods of working metal. They improve the mechanical properties of the article and sharply raise labour productivity.

For example, in an hour:

a skilled operative can grind and cut 6-7 bolts of a definite size on an ordinary turning lathe;

on a semi-automatic turret lathe he can produce 20 of these bolts;

a special bolt-cutting automatic lathe puts out 80 bolts;

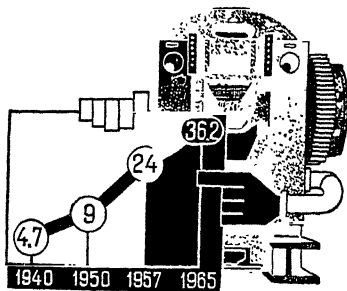
a stamping press produces up to 5,000 bolts.

Stamping greatly cuts down metal consumption. A turning lathe reduces 31 kilograms of quality steel into shavings before it turns out a 17-kilogram crankshaft out of a work-piece weighing 48 kilograms. Metal waste does not exceed 5 kilograms when a similar crankshaft is made on a stamping press. The technique of forge-and-stamp production aims to bring the shape of the forged piece as close as possible to that of the finished article and, consequently, decreasing subsequent cutting and reducing metal waste.

Foundry production is changing radically: centrifugal and pressure casting, and casting in metal and "shell" moulds have become widespread. The precision casting method is used for extremely complex-shaped machine parts, including machine parts that cannot be produced through mechanical treatment.

GROWTH OF OUTPUT OF FORGE AND PRESS MACHINES

(excluding hand presses and shears,
thousands)

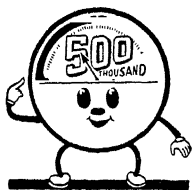


WITHOUT HUMAN AID

To produce certain kinds of articles, modern industry requires super-high speeds, tremendous power capacities and extremely high temperatures. The labour conditions are sometimes such that the worker cannot directly take a hand in the technological processes. For example, if the capacity of an electric motor exceeds 100 kw., the operative is unable to turn the switches on the control apparatuses fast enough. And yet machines like blooming mills require motors with a total capacity of up to 6,000 kw. to be switched on and off from 1,000 to 2,000 times an hour. These operations can now be done automatically, without human aid.

Automation, which is one of the most important trends in the present-day development of engineering, to a large extent depends on modern control instruments and automatically regulated technological processes. These instruments are produced by the *instrument-making industry*, which, born in the years of industrial reconstruction, is one of the youngest branches of Soviet machine-building.

The first instrument-making factories were, in effect, small workshops in spite of the intricate work that was done in them. For a long time, one such factory, for instance, produced a great variety of aircraft, automobile and tractor and heat-measuring instruments, clocks and drawing instruments. Another instrument-making works, built in 1929, produced gas analysers, draft indicators and electric heating instruments in addition to self-registering and indicator galvanometers, thermo-couples and resistance thermometers.



New instrument-making factories were built in subsequent years. In 1932 the output of control and measuring instruments increased 23 times, and in 1955 this output was exceeded 3 times. Today there are nearly 200 instrument-making factories in the Soviet Union.

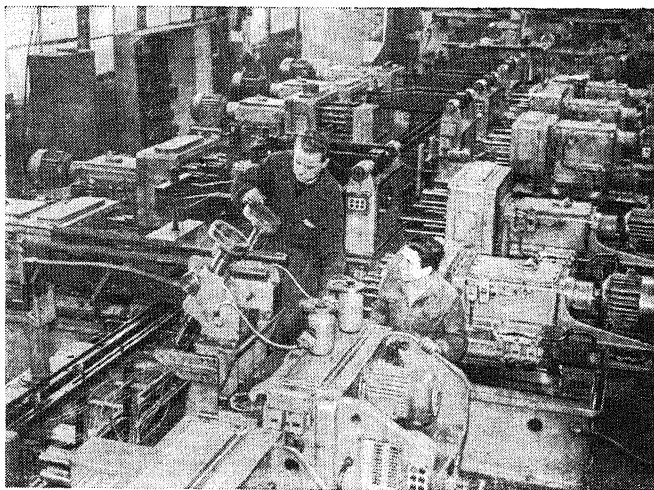
In 1956 alone the Soviet instrument-making industry produced half a million manometers, manovacuum gauges and vacuum gauges.

The plan for 1965 is to produce 2,000-2,100 million rubles' worth of various instruments, including computing and mathematical machines. In other words, the output will be 4.5-4.7 times bigger than in 1958.

But the creation of automatic instruments, facilitating the switch over to the latest methods of controlling technological processes, was the most important achievement of the instrument-making industry.

The machine-building industry now has automatic production lines for the mechanical treatment of both small-dimension (needles, watch parts, radio parts) and big-dimension articles. In the past few years the machine-tool factories alone have put out more than 50 types of highly efficient automatic lines of manifold lathes.

An automatic line machining motor cylinder blocks for the ZIL-150 truck allowed reducing production space 2.5 times, considerably raising labour productivity and cutting machining time from 135 to 15 minutes.



Automatic conveyer belt at the Orjonikidze Works, Moscow

A section tended by three operatives now fully satisfies the cylinder block requirements of the works in a single shift, whereas formerly 180 operatives were engaged on the same job in the course of three shifts.

In the weaving industry automatic looms made up 41 per cent of the stock of machines in operation in 1957.

At the automatic lines in the furniture factories one operative, without any physical effort, puts out 2,500 parts for 300 sofas in a single shift. At food enterprises there are automatic lines that wash bottles, fill them with milk, wine, beer or fruit juices and then cork and label them. The weighing and packing of various foods has also been automatized.

At the Moscow Meat-Packing Plant, automatic lines prepare more than a million meat cutlets per shift, and at a canning plant automated lines turn out almost a million cans of tomato paste per day.

In 1959 through 1965 the machine-building industry will commission at least 1,300 automated lines primarily in foundries and forge-and-press shops.

Soviet machine-builders are gradually passing from the automation of individual units and operations to the building of completely automated enterprises where all processes from the feeding of the initial materials to the finished product are carried out by a system of machines and automatons with the minimum participation of man.

At an automatic car piston works all the operations, from charging metal into the smelting furnace to the packing of the pistons, are done by machines.

At the First State Ball-Bearing Plant in Moscow there is a ball-and roller-bearing department where automation covers all the mechanical and thermal treatment operations, the checking, assembling, anti-corrosion treatment, the packing and the removal of the shavings.

In 1956 the regulation of the feed to the boiler units was automated at 97.4 per cent of the thermal power stations (taken as capacities) in the Soviet Union and regulation of the combustion in the furnaces was automated at 79.6 per cent of these stations. At the power stations now being built all the important processes, including the feed of the fuel and the chemical purification of the water, are being automated, and centralized control of the machinery is being introduced. The result of automation is that at big hydro-power stations the staff consists of 4-5 operatives per shift and at medium-sized stations of 2-3 operatives; 15 hydro-power stations are working without personnel constantly on duty.

Under comprehensive automation, the duty of the personnel is reduced to controlling the work of the automatic instruments and the general course of the production process.

In some cases remote control has been introduced with the aid of telemechanics.

At modern power stations the stoker has been replaced by an operative sitting at a control panel and watching the instruments telling him how much coal dust is being blown into the furnace by the stream of compressed air, what the water level is in the boilers and whether the steam pressure needs adjusting.



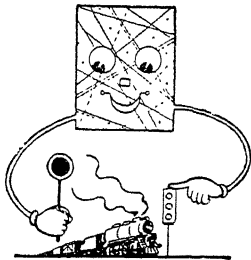
In 1957 remote control was installed at 32 power systems (69 per cent of the capacities); 51 hydro-power stations (46 per cent of the capacities) are operated by remote control. At the close of 1957 there were 325 remote-controlled sub-stations.

A blast-furnace can also be operated by remote control. The operative watches the physical and chemical processes of the smelting from a distance, away from the heat, dust and soot, in special premises that for the huge number of instruments in them look like a scientific laboratory.

The "electric hands" of the controller of the movement of trains are many kilometres long. His "electric eyes," a panel with a diagram of the traffic on all the lines of his sector, see the entire distance just as clearly on an inclement night as on a sunny day.

A further and more important stage in the development of automation, that is freeing man even from the function of control, is being prepared through the utilization of electronic computing machines in the automatic control of technological processes.

In the U.S.S.R., the designing of computing machines was started in 1948. The first small electronic machines were made and in-



stalled in 1952, and 1953-54 saw the appearance of big computing machines—the Strela, the BESM (БЭСМ) and the M-2.

The BESM, designed at the U.S.S.R. Academy of Sciences' Institute of Precision Mechanics and Computing Technology, performs an average of 8,000-10,000 arithmetical operations per second. In less than 20 hours this machine solves a sum with 800 equations requiring 250 million arithmetical operations. The Strela and the M-2 perform 2,000 operations per second.

Medium-size electronic machines are being built for designing offices, institutes and other organizations. At the same time the Soviet Union is producing special machines, calculation tables, electric modelling and computing devices for solving engineering and other problems as well as for the automation of the control of various machines, apparatuses, structures and systems.

The Ural, the digital computer for engineering research and calculations, is the most widespread of the special computing machines. A special machine, called Pogoda, is used for calculations necessary to forecast the weather. Another computing machine, the Kristall, is used for the roentgenostructural analysis of crystals.

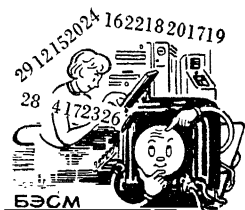
Control machines, which regulate a technological process in accordance with a pre-set programme without the help of an operative, are a variety of the computing machines mentioned above. The moment there is the slightest deviation from the normal course of the process (through wear of the equipment or changes in the quality of the raw material), the machine instantly calculates the corrections that have to be made.

The U.S.S.R. has lathes that take their "orders" directly from the blue print. They machine details with intricate shapes. A special device reads the blue print, translates its data into figures, which are then transformed into impulses that go to the electric motors controlling the tool.

Special computing devices automate the control of trains. They not only take account of the time-table but also the condition of the line, the weight of the train and the temporary, "unforeseen deviations" arising for one reason or another on the way.

The Communist Party and the Soviet Government consider all-round mechanization and automation to be the highroad of technological progress, which is essential to increased labour productivity. Under socialist society, all-round mechanization and automation of production are in the best interest of the people. They radically change the character of and facilitate the labour of millions of people, lead to higher productivity and make for shorter working hour and for the elimination of the considerable distinctions existing between mental and physical labour.

Pointing out the vast importance of technological progress under socialism, the June 1959 Plenary Meeting of the C.C. C.P.S.U. called on the industrial executives:



to begin passing over from the automation of certain production operations to the complete automation of technologies, shops and plants;

to increase output of means of automation;

to expand research, experimental designing and designing bodies concerned with the all-round automation of production operations;

to make greater use of radioelectronics in all branches of the national economy;

to give special training to workers, engineers and technicians.

The fruit of the creative effort of a whole army of scientists and designers, inventors and rationalizers, tireless seekers after the new, automation is laying the material and technical foundation for communism.

REMADE LAND

Guided by Lenin's teaching and supported by the working class and the peasantry, the Communist Party and the Soviet Government enabled the peasants to pass from petty individual farming to large-scale collective farming. This was a revolution that consolidated the socialist method of production in the countryside. The aftermaths of the war and certain grave errors committed in the management of agriculture in the post-war years somewhat hindered the growth of agricultural production for a short period.

The ground that had been lost by agriculture was, however, rapidly regained in 1953 and the next few years, when these errors were rectified, the collective farms were reinforced with specialists, the technical base of agriculture was strengthened and virgin lands were developed. The effort made by the Soviet people to bring about an upswing in agriculture was crowned with success.

All branches of agriculture, primarily its foundation—grain farming—are making swift headway.

The total grain crop in 1958 amounted to 136 million tons, with wheat accounting for 73.6 million tons.

Grain farming will be further promoted in the coming seven years with a view to raising the grain crop to 160-176 million tons a year.

Not only is grain a staple food, but it is also the only effective means of increasing the output of animal products, and, besides, the country must have adequate reserves.

Of the 1958 harvest, 56 million tons of grain, i. e., over 25 million tons more than in 1953, were sold to the state.

In 1958 grain was sown on an area of 125,200,000 hectares as against 106,700,000 hectares in 1953.

The area sown to wheat increased from 33 million hectares in 1913 to 69,100,000 hectares in 1957. Maize was grown on 18,300,000 hectares in 1957 as against 2,200,000 hectares in 1913.

In recent years the grain output has been increased substantially through the development of virgin and disused land.

GROWTH OF GRAIN CROP AREAS

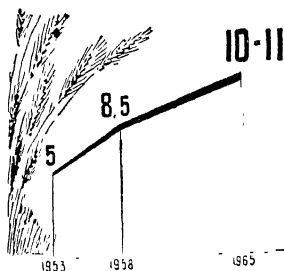


1913



1958

TOTAL GRAIN HARVEST
(000 million poods [one
pood=16.3 kg.])



A total of 36 million hectares of this new land were ploughed up in 1954-56. This is more than the combined crop area of nine European countries: West Germany, Austria, Belgium, Denmark, the Netherlands, Spain, Sweden, France and Italy.

The newly-developed areas have become major suppliers of wheat. In 1958 a total of 32 million tons of wheat was procured in these areas, which in 1953 could furnish only 10,432,000 tons.

Altogether, the grain procurements in these areas for the period from 1954 through 1958 increased by more than 64 million tons compared with

the procurements of the preceding five years.

Kazakhstan is now giving the state 5-6 times more grain than prior to the development of virgin and disused land. The collective- and state-farm deliveries in Siberia and the Urals have increased almost 150 per cent. In 1954-57 these regions gave the country an additional quantity averaging more than 16 million tons of wheat a year.

Not only grain farming, but also other branches of agriculture have made great progress in the past five years. With industry expanding at its present rapid rate, the country's need for *industrial crops* is rising continuously.

The area under industrial crops increased to 11,800,000 hectares in 1957 (in 1913 these crops were sown on 4,900,000 hectares).

Prior to the Revolution half of the *cotton* needed by Russia had to be imported, yet today the Soviet cotton economy is not only fully meeting the requirements of the country's textile industry but also exporting a part of the crop.

Uzbekistan alone is now producing as much cotton as cotton-growing countries such as Brazil, Pakistan, Turkey and Iran taken together.

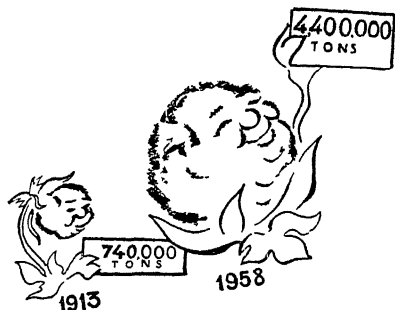
For the yield and quality of cotton the Soviet Union holds first place in the world.

The average cotton crop of the collective and state farms in Tajikistan was 2.7 tons per hectare in 1958.

In 1957 the U.S.A. grew an average of only 1.32 tons of cotton per hectare.

Soviet cotton-growers are making wide use of the tested square and square-pocket method of sowing with a

**GROWTH OF THE U.S.S.R. COTTON
OUTPUT**



narrowed space between rows which allows mechanizing the cultivation of the plantations in two directions.

The Soviet Union produces 80 per cent of the world's *flax fibre*. A total of 387,000 tons were produced in the country in 1957.

In 1957 *flax* was grown on 1,637,000 hectares. Flax is grown:

in Byelorussia,
the Baltic republics,
the North-Western and North-Eastern regions
of the Russian Federation,
North-West Ukraine,
Siberia.



Almost 35 per cent of the world's sugar-beet area is concentrated in the U.S.S.R. Prior to the Revolution, sugar-beet was grown only in the Ukraine and in the central chernozem belt.

In addition to the old areas, sugar-beet is now grown in

Byelorussia,
the Volga area,
Siberia,
the Soviet Far East,
the Baltic republics,
Central Asia,
Kazakhstan.

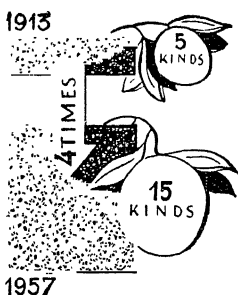
Compared with 1953, the area under sugar-beet has increased by nearly a million hectares. In 1958 the total output was 54,100,000 tons (in 1949-53 the annual average was 21 million tons), which is almost 300 per cent more than is harvested in the U.S.A.

The 1965 targets for the output of the chief industrial crops are:

cotton—up to 57-61 million tons,
sugar-beet—up to 76-84 million tons,
oil crops seeds—approximately up to 5.5 million tons,
flax fibre—up to 580,000 tons.

The output of potatoes and other vegetables has increased in the past five years. A network of specialized state farms is being set up around cities and industrial centres in order to step up the output of these important foodstuffs. The best land at the specialized state and collective farms will be used for potatoes and other vegetables and all the cultivation processes will be mechanized. The result of this will be that the yield will rise, costs will drop and the state will be enabled to reduce the retail price of potatoes and other vegetables.

By 1965 the total potato harvest will increase to 147 million tons as against 86 million tons in 1958. Moreover, the output of other vegetables will be big enough to satisfy the requirements of the population to the full.



The area under *oil-bearing crops* has been increased more than 3.5 times.

Instead of the five principal oil-bearing crops cultivated in Russia in pre-revolutionary times the country is now growing 15.

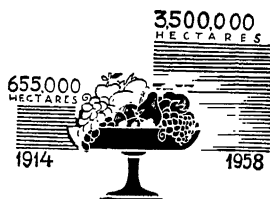
In 1914 *orchards and vineyards* occupied 655,000 hectares but by 1958 this area increased to more than 3,500,000 hectares. In the latter year alone more land (413,000 hectares) was planted to orchards and vineyards than in the five-year period from 1949 through 1953.

Vine is cultivated at 12,000 collective farms and at 250 specialized state farms.

Prior to the October Revolution the area under *citrus fruits* was limited to 160 hectares (in Georgia); it has since expanded to 16,200 hectares.

The output of hard and soft fruit will rise by at least 100 per cent within the next seven years, while that of vine—by not less than 300 per cent.

The expanding grain economy is serving as the basis for the present rapid development of *livestock-breeding*, particularly socialized animal-breeding, at the collective and state farms.



NUMBER OF PRODUCTIVE LIVESTOCK (million head)

	1916	1953	1958
Cattle	58.4	55.8	70.8
cows	28.8	25.2	33.3
Pigs	23.0	33.3	48.5
Sheep	about 90	99.8	129.6

The following increase in the output of the principal animal products is planned for 1965: meat (dead weight)—at least up to 16 million tons; milk—up to 100-105 million tons; wool—approximately up to 548,000 tons; and up to 37,000 million eggs.

The country's *fodder resources* have been greatly augmented in recent years. Fodder crops were grown in 1957 on an area of 45,400,000 hectares. Maize is playing an especially important role. The silage stocked up in 1958 amounted to 148 million tons (in 1953 the figure was 32 million tons).

The petty peasant economy of the past used to consume almost everything it produced. It was a semi-consumer economy and, to quite a considerable extent, a natural economy. Socialist agriculture is enabling the country to supply the population with bread and other food-stuffs and to provide the light and food industries with raw materials; it is a *developed commodity economy*.

GROWTH OF MARKETABLE PRODUCE

(million tons)

	1913	1953	1958	1965 (target)
Grain	22.4	35.8	56.0	—
Raw cotton	0.7	3.85	4.3	5.7-6.1
Sugar-beet	11.3	22.9	50.9	81.0
Potatoes	6.1	12.1	6.7	11.7
Meat (live weight)	3.4	5.4	5.6	11.0
Milk	7.0	13.7	22.1	40.6
Wool (1,000 tons)	77	198	312	540

COLLECTIVE AND STATE FARMS

In the U.S.S.R. foodstuffs are produced by state and collective farms.

A *state farm* is a government-run undertaking. It carries on its activities on public land with the aid of machinery belonging to the state. State farms are leading socialist enterprises in agriculture.

The first state farms were brought into being by the October Revolution. They were set up at former manor estates, on land that used to belong to the bourgeois landlord government. These first undertakings showed the individual farmers the advantages of big-scale socialized farming and helped the peasant masses to take the high road to collectivization.

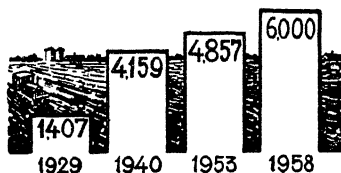
State farms are big agricultural enterprises in which is concentrated more than a quarter of the country's crop area (52 million hectares in 1958). In 1958 each state farm had an average of 28,000 hectares of land.

In the capitalist countries the agricultural enterprises are much smaller.

State farms have the most up-to-date machines for almost all production processes.

They may be called factories producing grain, meat, milk, cotton, wool, vegetables and so forth. Each state farm specializes in a definite field of agriculture. In addition to the branch they concentrate on, the state farms also develop other branches of agriculture, growing additional and subsidiary crops side by side with the crop they are most concerned with. This enables them to make the best use of their land, machines and manpower. State grain and livestock farms are the leading undertakings among these enterprises. At the close of 1957 there were more than 1,000 state grain farms and 3,100 state livestock farms.

GROWTH OF NUMBER
OF STATE FARMS



With the exception of a small quantity that is consumed by the state farms themselves, the entire produce is placed directly at the disposal of the state.



State farms deliver:
85% of their grain;



87% of their milk;



97% of their wool,



98% of their meat,



nearly 100% of their eggs;



all their cotton and
the output of some
other industrial crops.

At state farms labour is remunerated in exactly the same way as at other state enterprises (factories, mills). The workers receive a wage in accordance with their work. They receive bonuses for exemplary work and for over-fulfilling their quotas.

The Gigant State Farm, Rostov Region, may be pointed out as an example of a big mixed farming enterprise.

Founded more than 30 years ago, it has 46,000 hectares of land, of which 28,000 hectares are regularly sown to grain; its livestock consists of 6,500 head of cattle, 19,000 pigs and 63,000 chickens and ducks; the harvests at this

farm are invariably high. In spite of the adverse weather conditions in 1957, the wheat crop amounted to 1.82 tons per hectare, and the barley crop—to 1.92 tons per hectare.

In 1957 this state farm's income reached almost 8.5 million rubles. The Gigant is an exhibitor at the U.S.S.R. Agricultural Exhibition.

A *collective farm* is likewise a socialist enterprise but as distinct from government-run undertakings it is a voluntary production union of toiling peasants. Collective farms occupy state land which is secured to them for their free use in perpetuity, and everything they produce belongs to their members.

In the Soviet Union collective farms exist in the form of agricultural artels in which the principal means of production—land, implements of labour, draught animals and the fodder for them, seed stocks, and production premises—have been socialized.

Each member of a collective farm has the use of a small personal holding and private property—a house, productive livestock, poultry, small agricultural implements.

All the affairs of a collective farm are directed by the collective farmers themselves. The governing body at each collective farm is the general meeting of its members.

The meeting:

elects the executive—the chairman and the board;

adopts production plans—decides how the farm's fields are to be used, what crops should be grown and what kinds of livestock should be raised;

examines and approves the estimates of the farm's incomes and expenses.

The farm disposes of its income at its own discretion. When it distributes its products, it first of all carries out its commitments to the

state by selling it a part of its produce. Then it lays in a stock of seed, allots fodder for the livestock, replenishes its non-distributable funds, creates an insurance fund, and earmarks money for disabled members and for production and cultural requirements.

By decision of the general meeting of the collective farmers part of the produce is sold at the collective-farm market. The produce and cash income that go to the collective farmers are distributed among them. At the moment most collective farms use the workday unit to measure the amount of labour spent by the farmers and to calculate the remuneration for it. Many collective farms are, however, switching from evaluating the labour of their members by workday units to new, more progressive forms of account and payment.

The collective-farm system is ensuring a high living standard for farmers working honestly at the artels.

The final distribution of the income is made at the end of the year, but in the course of the year the members of the farm receive advance payments in cash and kind against their workday units.

The Progress Collective Farm, Dubno District, Rovno Region, paid its members a monthly advance of 4 rubles 50 kopeks per workday unit in 1955, 7 rubles per workday unit in 1956, and 10 rubles per workday unit in 1957.

These advance payments give the members an added incentive to develop the commonly-owned economy.

At the beginning of 1958 there were 78,000 collective farms in the Soviet Union. Most of them were big, economically strong undertakings.

In 1957, each collective farm had an average of:

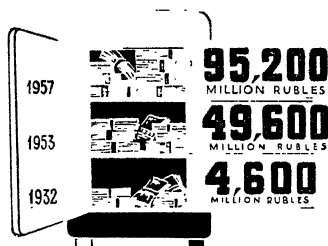
households	245
land	6,000 hectares
commonly-owned crops	1,696 hectares
commonly-owned cattle	374 head
pigs	255 head
sheep and goats	913 head

In 1957 the cash income netted per collective farm averaged 1,247,000 rubles.

The successes scored in boosting socialized farming in the past five years have led to a considerable rise in collective-farm incomes. In 1957 the cash incomes totalled 95,200 million rubles against 42,800 million rubles in 1952.

Incomes running into several million rubles are received by quite a few collective farms. For example, the mean income of each

GROWTH OF COLLECTIVE-FARM CASH INCOMES



collective farm in Stavropol Territory came to 8,500,000 rubles in 1957.

Let us, for a moment, glance at the past and present of the village of Koltsovka, Vurnary District, Chuvash A.S.S.R.

In a report to the Zemstvo* in 1912, the priest Lomonosov wrote: "There is terrible want in two of the villages of my parish: Koltsovka has 700 inhabitants of both sexes, and of the 160 households 16 eat their own bread; the second is Zelenovka, which has 400 inhabitants of both sexes, and of these 195 have nothing to eat."

In 1913, a bumper-crop year, the peasants of the village of Koltsovka harvested a total of 208 tons of grain, i.e., 1,376 kilograms per household. Half of the crop went to the landlord to pay for the use of the land. In the village there were 68 households which had no horses, and 56 households had no livestock whatever. All the "machinery" that the village could boast of consisted of two iron ploughs.

The village's very appearance betrayed its poverty: ramshackle, straw-roofed huts with chimneyless stoves, and a single public building—a "sentry-box" hut, which served as the community centre and where refractory peasants were flogged by order of the district court. In the whole village only two persons could read and write, but even they were not natives.

The land around the villages of Koltsovka and Zelenovka now belongs to the Lenin Collective Farm.

Its mean annual grain harvest adds up to more than 1,400 tons, i.e., it produces 7,360 kilograms per household.

The farm has a large number of livestock, poultry and waterfowl. The cows yield an average of about 3,000 litres of milk a year.

There is a pigsty for 600 pigs, two cow houses for 200 cows, two towers for 400 tons of silage, a 500-ton oil reservoir, a mechanized feed-kitchen, and so forth.

The farm's annual cash income comes to about 3,000,000 rubles.

Nothing of the old, pre-revolutionary way of life has remained in either Koltsovka or Zelenovka. The collective farm has built a club with an auditorium seating 500 spectators, a secondary school, an agromonomical laboratory, and a print-shop which prints the collective farm's newspaper that has been coming out for more than 20 years.

The "sentry-box" has been replaced by a nursery, close to which there are a hospital with X-ray, physiotherapeutical and other departments, a maternity home, a pharmacy, a post-office and a shop. There are kindergartens for children of pre-school age.

The collective farm has two power stations, a cinema, a radio-broadcasting centre, a telephone exchange and a library. Every home has electricity and a radio loudspeaker. Illiteracy has been wiped out long ago. The collective farm has reared its own intelligentsia: livestock experts, doctors, mechanics, radio-operators, cinema operators and electricians. More than 120 of the collective farmers have diplomas to show that they have finished agrozootechnical courses.

* Elective district council in pre-revolutionary Russia.—Tr.

The collective farm is doing much to raise the living standard of its members. More than 50 houses have been built in recent years alone.

That is how the peasants live and work at collective farms throughout the Soviet Union.

FROM THE WOODEN PLOUGH AND SICKLE TO THE TRACTOR AND COMBINE HARVESTER

Before agriculture could develop successfully along socialist lines it had to be supplied with modern machines. Outlining the path for the reorganization of agriculture and its conversion into a leading branch of the economy of the future communist society, Lenin wrote:

“...Petty peasant
collective farm
electrification.”

Electrification is the highest stage of mechanization. In Russia mechanization had to be started almost from scratch. The pre-revolutionary countryside used nothing but primitive implements. The peasants could not afford expensive machines. The landlords did not care to acquire them because manual labour was much cheaper.

In 1910 the peasant households had:

7.8 million sokhas and kosuls*,
2.2 million wooden ploughs,
4.2 million iron ploughs,
17.7 million wooden harrows.

The horse was the chief means of traction in the Russian countryside prior to the Revolution, but many peasants could not even dream of owning a horse: a third of the peasant households did not have horses. The soil was cultivated with the sokha, the grain was harvested with the sickle or scythe and the threshing was done with flails. Mechanical motors made up less than one per cent of the power capacities in the countryside.

At the beginning of 1919, at the 8th Party Congress, Lenin said: “If tomorrow we could supply one hundred thousand first-class tractors, provide them with fuel, provide them with drivers—you know very well that this at present is sheer fantasy—the middle peasant would say, ‘I am for the kommunia’ (i.e., for communism).”

In the early years of Soviet power machinery provided by the state became a magnificent agitator for Soviet power in the countryside, for collectivization.

A state farm, the Lesniye Polyany, was organized near Moscow in 1919 on the initiative and with the direct participation of Lenin. When the peasants were given tractors with which to plough the land, the kulaks began a campaign against tractor ploughing, spreading rumours that tractors spoil the soil. But the efficiency of the tractors proved stronger than the kulak campaign. Whole villages turned out to

* Primitive wooden ploughs without ploughshares.—Tr.

watch the tractor work. The peasants realized that the tractor was a fine machine and began to ask the state farm to plough up their land. The tractor-drivers protested that they could not afford to mark time on the tiny patches and suggested ploughing up the fields without stopping at the boundaries marking off the individual holdings. Many peasants doubted if any good would come of this but in the end they agreed to unite their land.

Industrialization has given machines to agriculture and collectivization has made it possible to use these machines on the big fields of the collective farms.

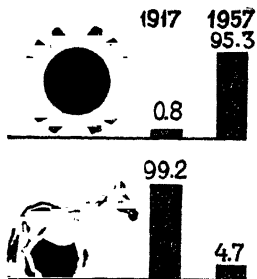
**NUMBER OF TRACTORS, COMBINE HARVESTERS AND TRUCKS
IN SOVIET AGRICULTURE**
(1,000)

	1929	1958
Tractors (in terms of 15 h. p. units)	18	1,700
Combine harvesters	2 machines	500
Trucks	0.7	approx. 700

Thanks to the Communist Party's policy of giving priority to the development of the heavy industry, agriculture has become a mechanized branch of the national economy. There is not a single sphere of farming that is not equipped with a great variety of machines. Machines plough and harrow the soil, thresh the grain, cut lush fodder into silage, pick cotton, plant seedlings, pull flax and dig sugar-beet. Horse ploughing or harvesting grain without combines would seem strange today.

In 1958 the capacity of all the machines in socialist agriculture added up to 119,100,000 h. p.

STRUCTURE OF POWER CAPACITIES IN AGRICULTURE



All mechanical motors (tractors, combines, trucks, power installations and so forth)

Draught animals (in terms of mechanical power)

At the collective and state farms machines do almost all of the ploughing, and the sowing of grain crops, cotton, sugar-beet and some other industrial crops, and 92 per cent of the harvesting of grain (excluding maize).

Mechanization not only lightens labour but also saves a tremendous amount of manpower.

If the field-work done by the machine and tractor stations in 1956 had been carried out without machines, agriculture would annually have needed an additional army of 26 million workers.

Mechanization on the basis of electricity is becoming widespread in agriculture today.

Electrification of the collective-farm village means lighting, the radio, the cinema, television, a higher living standard and a higher cultural level. But electricity is of even greater consequence in production. More than half the electric power now being consumed in agriculture is used in production.

The utilization of electric power in agriculture makes the work easier and more productive. For example, to obtain one litre of milk manually, the milkmaid has to compress her hand 100 times. A milkmaid tending 10 cows has to compress her hand 20,000 times to obtain the day's quota of 200 litres of milk. Electric milking frees the milkmaid from this tiring work and allows her to tend a larger number of cows.

In agriculture a kilowatt of electric power replaces 8 persons working manually.

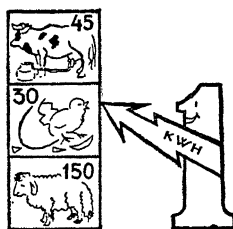


1 kwh. of electricity can be used:

to milk 45 cows,

hatch 30 incubator chicks,

or shear 150 sheep.



In 1957 agriculture was using 540 times more electric power than prior to the Revolution.

Almost all the machine and tractor stations, 93 per cent of the state farms and nearly 40 per cent of the collective farms were receiving electricity at the beginning of 1958. The electrification of all the collective farms in the country will, in the main, be completed by 1965, and the state farms and maintenance and repair stations will be covered by electrification much earlier than that. The volume of collective-farm electrification planned for 1959-65 is 2.5 times greater than what was done in this field in 1952-58. In the course of the next seven years the

consumption of electricity in agriculture will increase approximately four-fold.

The mass utilization of modern machines on collective- and state-farm fields has given rise to a rapid growth of labour productivity in socialist agriculture. Compared with 1913, labour productivity in agriculture increased 3.8 times by the beginning of 1957. In the period from 1953 through 1958 labour productivity rose by 35 per cent at the state farms and by 36 per cent at the collective farms. The greatest successes were scored in grain farming.

Harvester combines raised labour productivity more than 70 times compared with manual grain harvesting, and the threshing-machine makes labour 80 times more productive than threshing with flails.

The Soviet Union has every possibility of mechanizing the whole of agricultural production in all respects.

MTS AND RMS

The following gives an idea of how collective farms are served with agricultural machinery.

In the early years of Soviet power the state used to turn tractors and other agricultural machines over directly to collective farms. But when the collective-farm movement began to spread quickly and thousands upon thousands of collective farms were formed every year, industry found itself unable to supply them all with tractors. Besides, most of the collective farms did not have the means with which to purchase agricultural machinery or the personnel to operate it. Furthermore, the Communist Party and the Soviet Government had to give the young collective farms their unflinching attention to ensure their development along socialist lines.

That was precisely the time the first *machine and tractor stations* were organized. They were state-run enterprises in whose hands the main agricultural machinery was concentrated. The machine and tractor stations were charged with the task of rendering all-sided aid to the collective farms and of providing them with political leadership. They helped the farms with machinery, promoted their expansion, taught the peasants to run big social enterprises and accustomed them to socialist labour discipline, and brought culture to the countryside.

In 1957 the Soviet Union had nearly 8,000 machine and tractor stations with 681,000 tractors and 104,000 trucks.

These stations have trained a huge army of tractor and harvester-combine drivers, tractor team-leaders, truck drivers and so on. Millions of collective farmers, men and women, have been trained at the mechanization schools and various courses set up at the machine and tractor stations.

In 1957 the machine and tractor stations had an aggregate staff of more than 2 million permanent workers.

It is to the credit of the machine and tractor stations that most of the collective farms have become big, economically strong socialist undertakings receiving high incomes and having a numerous, skilled personnel.

At present the collective farms are economically strong enough to purchase and, what is especially important, to make effective use of the latest kinds of machines. Many of them have done much to mechanize production processes and have their own small tractors, trucks, power stations, electric motors and other equipment.

In these conditions there is no longer any need for a machine service system through the machine and tractor stations. More than that, this system has begun to check the further development of the leading collective farms, for it is hampering the initiative of the collective farms and the collective farmers. The presence of two masters—a collective farm and a machine and tractor station—on one and the same tract of land has obliterated the responsibility of both the collective farm and the machine and tractor station for the harvest.

On March 31, 1958, the Supreme Soviet of the U.S.S.R. passed a law On the Further Development of the Collective-farm System and on the Reorganization of the Machine and Tractor Stations.

Article 2 of this law reads: "In view of the level attained by the economic and organizational development of the collective farms it is necessary to reorganize the machine and tractor stations into repair and maintenance stations. The tractors, combine harvesters and other farming machinery belonging to the machine and tractor stations are to be sold to the collective farms desiring to purchase them. The collective farms that are unable to pay the full amount for the tractors and machinery are to be allowed to pay in instalments depending on their economic position."

The repair and maintenance stations repair machinery, sell new machinery, spare parts, oil products, fertilizers, pest-killers and other similar goods to the collective and state farms, organize the hire of machines that the collective farms do not have, carry out special work such as construction and irrigation by agreement with the collective farms and help them to raise the qualifications of the machine operatives.

But not all collective farms are yet in a position to purchase tractors and other machines. For that reason a production and technical service through machine and tractor stations has been temporarily preserved in districts with economically weak collective farms.

Most of the collective farms, however, have purchased the machine and tractor station equipment and paid for it in full within a short space of time.

By December 1958 close to 80 per cent of the machine and tractor stations were reorganized into repair and maintenance stations. More than 83 per cent of the collective farms have purchased the farming machinery of these stations.

"The reorganization of the machine and tractor stations will accelerate the forward movement of Soviet society along the road to communism.

"After collectivization, which was carried out on the basis of Lenin's brilliant co-operative plan, these measures are a further, exceptionally important, major step in the development of socialist agriculture."

They will help to raise labour productivity still further, and to reduce the outlay of labour and means per unit of output. Within the

next seven years it is planned to raise labour productivity approximately 100 per cent at the collective farms and 60-65 per cent at the state farms.

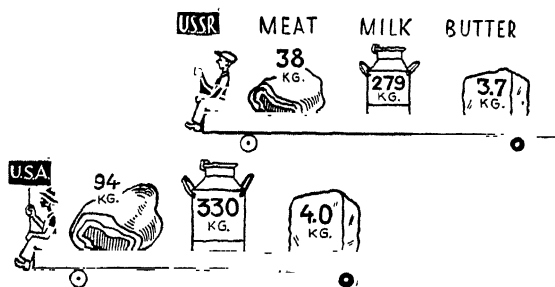
OVERTAKING THE U.S.A.

The output of farm produce is growing steadily, but not as fast as is the demand for it. One of the conditions making for a further improvement in the welfare of the people is that there should be a steep rise in the output of animal produce, particularly meat.

The successes that have been scored by agriculture have made it possible to advance the task of overtaking the U.S.A. in per capita output of meat, milk and butter.

Before you can win a contest you must know your rival. The following is a comparative table showing the output of animal produce in the U.S.A. and the U.S.S.R.

In 1958 the per capita output was:



To overtake the U.S.A. in the output of meat and milk per head of population means producing a dead weight of 4.2 tons or a live weight of 6.7 tons of meat and 14.1 tons of milk per 100 hectares of farmland. The annual output of milk must be brought up to 70 million tons and of meat and fat (dead weight) to 20-21 million tons.

Had we regarded the figures of this plan from a purely arithmetical point of view we might have got the impression that the task before us was beyond our strength. But simple arithmetic cannot be applied to our Land of Socialism. The state and collective farms are able to step up their output on a scale that can find no parallel in history. A comprehensive system of measures making this extremely difficult task practicable has been worked out.

The decisive role in effecting a steep rise in the output of milk is played by the productivity of animal-breeding.

Here are some figures showing how sharply the output of milk has risen through the implementation of the measures the Communist Party worked out to promote the rapid development of social livestock-breeding.

The January (1955) Plenary Meeting of the Central Committee of the C.P.S.U. set the task of raising the average milk output to at least 1,700 kilograms per cow by 1960.

This task was carried out ahead of time: in three years instead of six. In 1958 the average yield per cow was 1,913 kilograms at the collective farms. The state farms increased the milk output at a faster rate and by 1957 their cows were yielding an average of 2,700 kilograms of milk.

The experience of the leaders in the livestock-breeding emulation movement shows what tremendous potentials the collective and state farms have for increasing the productivity of livestock. In 1957 first place among regions, territories and republics was won by

Ryazan Region, where the average yield per cow was 3,200 kilograms. Twice Heroine of Socialist Labour P. N. Kovrova, milkmaid at the Fundament Sotsializma Collective Farm, Shilovo District, Ryazan Region, obtained 8,000 kilograms of milk per cow. In the years she has worked at the farm she has obtained a total of 1,100,000 kilograms of milk.

The collective and state farms are bending every effort to raise the fat content of the milk.

An increase of 0.1-0.2 per cent in the fat content of milk gives the country an additional quantity of 16,000 tons of butter.

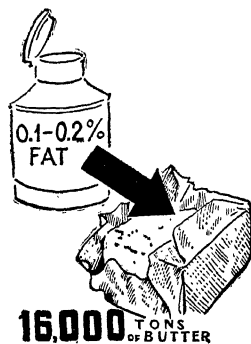
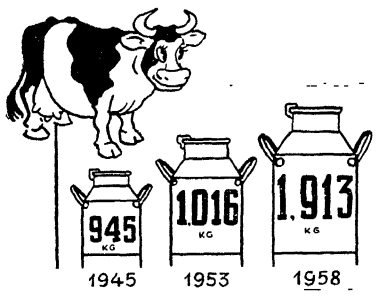
In 1958 the Soviet Union produced 57.8 million tons of milk or almost 279 kilograms

per head of population; in the U.S.A. the figure was approximately 330 kilograms per head of population. The U.S.S.R. plans to produce 100-105 million tons of milk in 1965 or 30-35 million tons more than is needed to overtake the U.S.A.

The Soviet Union's 1958 butter output amounted to 770,000 tons or 3.7 kilograms per head of population; the U.S.A. produced something like 4 kilograms per head of population. In 1965 Soviet butter-making factories will put out more than a million tons of butter, while the figure covering all the butter that will be made in the country will rise to 1,150,000 tons. This is over 300,000 tons more than is needed to overtake the U.S.A.

In 1958 the Soviet Union produced 7,900,000 tons of meat or 38 kilograms per head of population; in the U.S.A. the meat output added

MILK YIELD AT COLLECTIVE FARMS (per cow, kg.)



up to about 94 kilograms per head of population. The Soviet Union's target for 1965 is at least 16 million tons of meat. This quantity is still below what is needed to carry out the task of overtaking the U.S.A. in the output of meat. But socialist agriculture possesses potentials, which, if properly utilized, will enable the country to overfulfil its plans both as regards volume and the time-table.

It is planned to attain three-fifths of the necessary rate of growth through an increase in the number of livestock and poultry.

Two-fifths—by increasing the dead weight of livestock and by fattening young animals.

The main reserve for increasing the output of meat is the all-out promotion of pig-raising as the fastest-ripening branch of livestock-breeding. Intensified pig-raising allows more than doubling the meat output in a single year.

In 1958 the production of meat rose by 2,100,000 tons (dead weight) above the 1953 level. Hundreds of leading collective and state farms produced more than 10 tons of meat per 100 hectares of farmland.

Poultry-breeding and rabbit-growing are other fast-ripening branches of livestock-breeding yielding nourishing and cheap meat.

The struggle to increase the output of meat and milk is inseparable from the effort to improve the fodder base. No wonder folk say: "Judge how much a cow yields by how much it drinks and eats."

Extension of the maize areas is contributing tremendously towards increasing the country's fodder resources. It is the best silage plant in all zones of the Soviet Union and not for nothing it is called the "queen of the fields."

In 1958 the collective and state farms laid in a stock of 148 million tons of silage, including 108 million tons of maize silage.

Correct utilization of farmland and the cultivation of the highest-yielding and nourishing fodder crops are an indispensable condition for the development of livestock-breeding.

The Soviet Union's victory in the economic competition with the U.S.A. will be convincing proof of the indisputable, decisive advantages of socialism over the capitalist system.

SHORTENING DISTANCES

The most diverse freight—iron ore and pig iron, steel and coal, timber and grain—flows endlessly along railways and motor-roads, air routes and water-ways, in trains, trucks, aircraft and ships. This freight is required by consumers without delay, urgently, as fast as it can be delivered. If this movement were to discontinue, the life of towns and villages would come to a standstill, factories and mills would stop work for lack of raw materials and fuel, crops would remain unharvested in the fields, and the collective farmers would not get machinery and manufactured goods.

The tasks and importance of the transport system increase in proportion to the growth of socialist industry and agriculture. More goods have to be transported at ever-increasing speeds.

ALONG STEEL ROADS

In the Soviet Union all forms of transport are developing harmoniously, comprehensively, as a single network. In this network the most important role belongs to overland forms of transport, primarily to the *railways*, which carry 83 per cent of the freight and 81 per cent of the passengers.

Steel roads now link up all the major towns, industrial centres and agricultural districts of the Soviet Union. In 1913, Russia had the longest railways in Europe but in spite of that she suffered tremendously from a lack of roads. Only 17 per cent of the railways were in the Asian part of the country, which occupies three-quarters of Russia. The only means of communication with Siberia and the Far East was along the single-track Trans-Siberian Railway, and with Central Asia—along the Orenburg-Tashkent Railway. On 90 per cent of the railways the tracks consisted of light rails, weighing less than 34 kilograms per linear metre. Heavy trains could not run on these lines and, besides, there was a shortage of rolling stock.

The Soviet Union inherited from tsarist Russia 60,000 kilometres of railways that had been built in the course of 80 years.

The length of the railways has been increased by 62,200 kilometres in the 40 years of Soviet power.



Here are just a few of them:

1924. A railway was built from Kazan to Sverdlovsk via Agryz and later prolonged to Kurgan to become a direct and the shortest route between the capital and the industrial Urals.

1926. The development of the Kuzbas was started with the building of railways to Guryev, Novokuznetsk and Abakan.

1931. The Turkestan-Siberian Railway, known as the Turksib, linked Central Asia up with Siberia. The same year saw the commissioning of the Petropavlovsk-Karaganda Railway, the first section of the "Second Turksib," which was completed after the war when a line was built to join the stations Mointy and Chu.

Many new steel roads were laid during the difficult war years. One of them, the Pechora Railway, runs for 1,600 kilometres through regions with eternally-frozen soil and impassable forests and swamps.

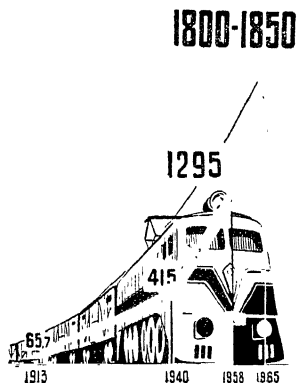
The Kartaly-Akmolinsk Railway, built back in 1943, was extended in post-war years to Kulunda and Barnaul to form a through 2,080-kilometre line along the South Siberian Railway.

In 1956 the country had 120,700 kilometres of railways in operation.

The extension of the railways by more than 100 per cent in Soviet years made it possible to increase the freight turnover and to intensify passenger traffic.

GOODS TRANSPORTED BY RAIL

(000 million t./km.)



For its railway freight turnover the Soviet Union surpassed the U.S.A. in 1954 and stepped into first place in the world.

The rate at which the railway freight turnover increased annually in the five years from 1953 through 1957 was almost equal to the total freight turnover of the railways in Britain and France taken together. In 1957 the Soviet railways monthly transported as much freight as was carried by Russia's railways throughout the whole of 1913.

There will be a sharp increase in the railway freight turnover in the next seven years. It will rise to 1,800,000-1,850,000 million tonkilometres or by 39-43 per cent.

The Soviet Union has the heaviest passenger railway traffic in the world.

The principal means by which this upswing was brought about are the speed and size of the trains and a reduction of carriage idle time to the minimum.

It is now universally recognized that the Soviet railways are the most effectively-run in the world.

The following shows how the operational indices of the rolling-stock were improved in Soviet years:

	1913	1940	1957
Turnover per freight car (days) . .	12.27	7.37	6.12
Mean commercial (section) speed of freight trains (km./hr.) . . .	13.6	20.3	25.6
Speed of electric trains . . .	—	26.6	31.3
Mean technical speed of freight trains (km./hr.)	22.0	33.1	37.8
Speed of electric trains . . .	—	41.5	41.7
Mean daily run of a locomotive hauling a freight train (km.) . .	119.1	257.0	316.9
Electric locomotive	—	367.0	456.7
Diesel locomotive	—	356.7	426.5

However, smooth organization alone proved insufficient to increase the capacity of the railways. New and better means of traction were required.

One of the exhibits at the Railway Museum is a small, funny engine which is one of the first steam-engines built a century ago. This machine was gradually improved upon and for a whole century the steam-engine ruled the railways.

Experience, however, advanced the problem of switching the railways to diesel and electric traction.

A diesel engine is a locomotive which is impelled not by a steam machine but by an internal-combustion engine operating on liquid fuel, for which reason it is much more economical than a steam locomotive. Compared with the 4-5 per cent efficiency of a steam-engine its efficiency adds up to 24-26 per cent.

The rapidly expanding national economy called for the creation of increasingly powerful diesel locomotives.

The DB series of 1,000 h. p. diesel engines was put out in 1946.

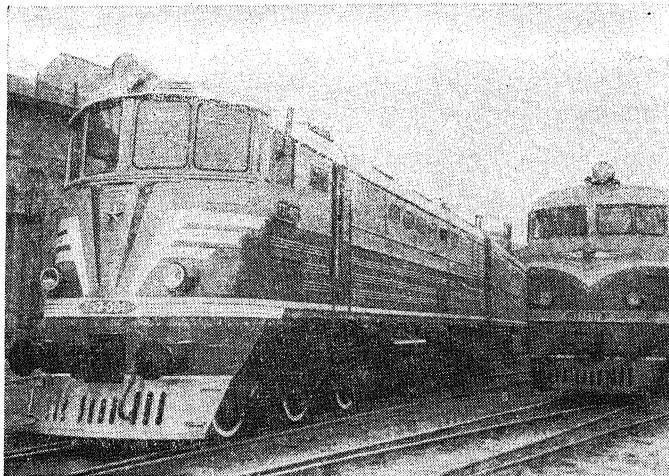
In 1947 production was started of the TE-1 series of 1,000 h. p. diesel engines.

In 1948, the Kharkov Works began producing the TE-2 two-sectional diesel locomotive with two engines totalling 2,000 h. p. The serial production of this locomotive was started in 1950.

The two-sectional TE-3 diesel engine, hauling a train weighing more than 4,000 tons, easily climbs steep gradients, while on flat stretches it develops a speed of over 100 kilometres an hour. It can be used for passenger express trains running at a speed of over 150 kilometres an hour.

Designers are adapting the TE-4 gas-generator diesel locomotive to run on anthracite. This will result in a large saving of liquid fuel. With five tons of anthracite in its fuel bunker, such a locomotive can travel for more than 600 kilometres without refuelling. A steam-engine uses up six times more coal for a similar distance. The TE-4, which runs on mixed fuel, has a 2,000 h. p. engine.

The capacity of the diesel on the TE-7 passenger-train locomotive comes to 4,000 h. p. It develops a speed of up to 140 kilometres an hour when hauling a train weighing 1,000 tons.



A TE-7 diesel locomotive

The electric locomotive is the best railway engine of modern times. It works with equal efficiency on energy drawn from a hydro-power, thermal or nuclear power station. It can also use solar energy converted into electricity of the necessary voltage at heliopower stations.

Forty years ago people could only dream of such a wonderful machine, for pre-revolutionary Russia did not have a single electrified kilometre of railways even though the need for them was already acute. This was primarily felt on steep inclines. Let us cite just one example. The oil-trains running from the Caspian to the shores of the Black Sea had to stop at the Surami Pass and be re-formed so as to reduce their weight on the journey across the Transcaucasus. Every train was hauled into the pass by three and sometimes four steam-engines crawling at the snail's pace of 12-15 kilometres an hour.

A plan for the electrification of the Surami Pass was drawn up at the turn of the century, but prior to the Revolution nothing was done to carry it out, a fate shared by many other remarkable ideas advanced by Russian scientists and engineers.

One of the chief barriers to the electrification of the railways was the inadequacy of Russia's power base.

In 1913 electricity was used by only 300 of the railway stations, for which purpose they had 15-20 h. p. "runners." Electric motors were installed in only some of the big workshops, which in Soviet years were transformed into repair plants.

The consumption of electricity for transport purposes has increased 150 times in Soviet years. Electric power is now used not by

300 but by thousands of railway stations. The quantity of electricity at the disposal of each railwayman has increased more than 60 times.

The first electric trains were put in operation in 1926. They made the run from Baku to Sabunchi, carrying Baku workers to the oilfields. The first electric train pulled out of Moscow's Northern Station three years later, while at the close of the period of the First Five-Year Plan electric traction was first used on the railway going over the Surami Pass.

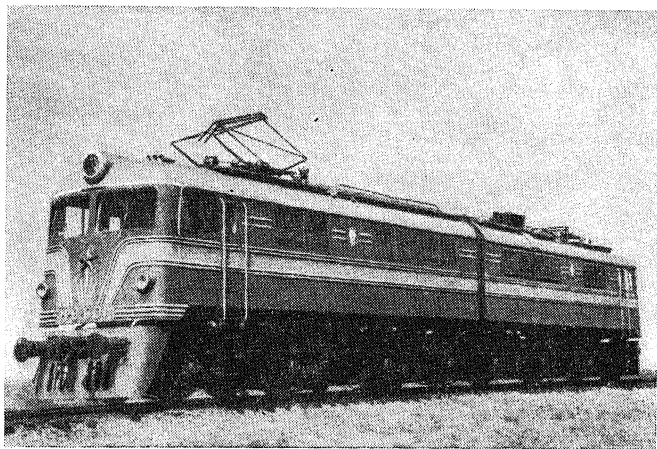
In 1957 electric trains carried 2.3 times more freight than the railways of tsarist Russia in 1913.

The Budyonny Electric Locomotive Works at Novocherkassk is producing the H-8 5,700 h. p., eight-axle freight electric locomotive, which is designed for busy electrified lines carrying heavy trains. This is the most powerful locomotive in the Soviet Union. It has three times the capacity of the VL-19, the first Soviet electric locomotive.

On the Barabyn section of the Omsk Railway, each electric locomotive now does the work of three steam-engines. Although the freight and passenger traffic has almost doubled on the line, the number of electric locomotives serving it is 40 per cent fewer than the number of steam-engines that used to run on this line before it was electrified.

On the Dolgintsevo-Zaporozhye and Rioni-Tkibuli sections and in the Surami and Jarjursky passes each electric locomotive replaces four steam-engines.

The U.S.S.R. has more electrified railways (in 1957 they totalled 7,700 kilometres) than any other country in the world. The plan is to electrify another 20,000 kilometres of railways in the course of the next seven years.



H-8, an eight-axle electric locomotive

In that period a total of approximately 100,000 kilometres of railways will be transferred to electric or diesel traction. Electric and diesel locomotives will account for 85-87 per cent of the freight turnover in 1965 as against 26 per cent in 1958.

Electric trains will run from Moscow to the Pacific Ocean. This will yield an annual saving of at least 18 million tons of coal and reduce operational costs by more than 2,700 million rubles as compared with steam traction. Complete electrification of the Moscow-Leningrad and Moscow-Caucasus lines will convert them into speed railways.

The bigger the scale on which powerful and improved traction is introduced on the railways the greater will be the possibility of increasing the mean weight of a freight train. But before this can be done the fleet of cars will also have to be reconstructed.

In the early years of Soviet power 20- and 40-ton freight cars were rarities in the country. These cars, which in those days seemed gigantic compared with the old 16.5-ton Russian-made cars, were imported from Britain and the U.S.A. Today both types have become rarities in real sense of the word. The present fleet is made up mainly of 50- and 60-ton cars. But even these are no longer able to cope with the growing volume of the freight. That is why the railways are getting new types of freight cars, including closed cars with an increased useful space, six-axle semi-cars with a pay load of 95 tons, isothermic cars with mechanical cooling and electric heating, and increased-capacity tank cars. In early 1957 all the freight cars were fitted with automatic coupling and in 1959 they will be equipped with automatic brakes.

Thousands of kilometres of the operating railway network have been renewed, mostly with heavy-duty tracks. The length of the lines laid on crushed stone will be extended to 61,000 kilometres by 1960.

On lines with the heaviest freight traffic this will allow running trains weighing 4,000-5,000 tons, and on coal routes—up to 6,000 tons. These trains will be a kilometre long.

In the course of 1956 alone the leading teams of engine-drivers covered almost 2,500,000 heavy freight routes and transported nearly 900 million tons of freight over and above the established norms.

In the light of this, consider how great are the other unutilized potentials of the railway transport.

For example, it has been calculated that a 10 per cent increase in the car turnover makes tens of thousands of cars redundant and reduces capital investments for the building of new cars by 1,500 million rubles.

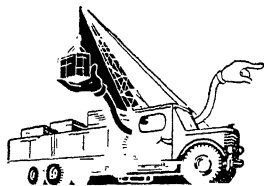
Calculated on a national scale a cut of one per cent in the mean transport distance reduces transport costs by 300 million rubles a year. On the railway transport a one per cent saving of fuel reduces costs by 80 million rubles a year. A freight weight increase of one per cent per train and a load increase of one per cent per car decreases operational expenses by approximately 100 million rubles.

If all these potentials were utilized, trains would run faster and carry more freight.

ON MOTOR-ROADS

No matter how fast the railways develop, man will not be able to manage without another form of overland conveyance, the *automobile* which does not require tracks. All it needs are even and durable roads.

The Soviet Union still has regions with few or no railways at all. In those regions the automobile is the principal form of transport. It carries passengers and freight in the Pamir mountains, in the vast steppes of Kazakhstan and Central Asia, and across the hills of the Magadan Region. The automobile is chiefly meant to carry passengers and freight over short distances.



In 1957 the mean distance over which freight was transported was (kilometres):

Trucks	11.8
General-purpose cars	16.8
Inland water-ways	480
Railways	815

The automobile transport also carries freight unloaded from the railways at big railway junctions and industrial centres, transporting it over distances ranging from 50 to 100 kilometres. Cars have recently been carrying an increasing volume of freight between towns over a distance from 200 to more than 500 kilometres.



GROWTH OF FREIGHT TURNOVER AND TRANSPORTATION OF FREIGHT AND PASSENGERS

Automobile Transport of the National Economy of the U.S.S.R.



Year	Freight turnover (1,000 mil- lion t./km.)	Transport- ation of freight (million t.)	Year	Freight turnover (1,000 mil- lion t./km.)	Transport- ation of freight (million t.)
1913	0.1	10.0	1950	20.1	1,859.2
1940	8.9	858.6	1957	61.7	5,216.4

General-Purpose Automobile Transport of the Ministries of the Automobile Transport and Motor-Roads of the Union Republics

	1940	1950	1957
Freight turnover (1,000 million t./km.)	0.3	0.9	15.0
Freight transported (million tons)	15.5	46.4	889.4

Passengers carried by general-purpose buses (millions) . .	590	1,053	6,817.5
Work of general-purpose buses (1,000 million passenger kilometres)	3.4	5.2	33.7

In the next seven years the freight turnover of the automobile transport will increase approximately 90 per cent and the transportation of passengers by buses—more than 200 per cent.

Although the automobile transport in the U.S.S.R. carries the biggest volume of freight compared with other forms of transport, its freight turnover is considerably smaller than that of the railway, maritime and river transport.

The reason is not only that it serves chiefly short routes. The freight turnover of the automobile transport is steadily increasing and its contribution to the total freight turnover in the country is growing. But the other reason is that compared with the railways and the river transport it is still quite a young branch of the transport system, having been established in Soviet years.

Prior to the Revolution and in the first years after it automobiles were rare visitors in the streets of even the biggest cities. Besides, these automobiles bore the trade mark of foreign firms. They were imported or assembled from parts imported from other countries.

The first Soviet automobile was the "AMO F-15" 1.5-ton truck. It was built in 1924 by the AMO Works in Moscow on the eve of the seventh anniversary of the October Revolution.

In 1924-31 Soviet machine-builders turned out several thousand trucks of various design and 300 low-powered NAMI passenger cars. This marked the birth of the Soviet automobile industry and, at the same time, of the automobile transport.

With the building of giant automobile works in Moscow and in Gorky the output of cars exceeded 200,000 machines a year already in the period of the Second Five-Year Plan. At present automobiles and buses are made at many other automobile and automobile-assembling works (in Minsk, Yaroslavl, Ulyanovsk, Kuttaisi, Pavlov-on-Oka, Odessa and other towns).

The quantitative growth of the automobile output is accompanied by improvements in design. After the war the GAZ-A, GAZ-MM, M-1, ZIS-5, ZIS-101 and YAG-6 were replaced by improved trucks and passenger cars, including the Moskvich and the Pobeda. But even these have receded into the past of the Soviet automobile industry. The following gives an idea of the Soviet automobile industry of today.

The Moscow Automobile Works is now producing the seven-passenger de-luxe ZIL-111, which for its speed (up to 140 kilometres an hour), can vie with the best cars made abroad. Used as an inter-town taxi, the ZIL-111 transports passengers much faster than express trains.

The Gorky Auto Works continues to put out the Volga, a comfortable passenger car.

The new Moskvich is a low-powered car modelled after the Volga. It is only a little bigger than its predecessor, but it has a much more



A ZIL-111 car



A Volga car

powerful engine which allows it to develop a speed of more than 100 kilometres an hour. Steep inclines are no problem for the Moskvich.

The Gorky Auto Works has started the production of the Chaika, a new, comfortable limousine. It is powered by an eight-cylinder 180 h. p. motor and travels at a speed of up to 160 kilometres an hour.

Medium-power buses with heating, large windows and seats with tilting backs are being produced for inter-town communication.

The Lvov Bus Works has started the production of the new LAZ-695 60-passenger express bus for inter-town runs.

The Gorky Auto Works is putting out several kinds of high cross-country capacity freight and passenger cars. These include the eight-passenger GAZ-69 and GAZ-69A, and the GAZ-47, called a wonder car, because it travels over terrain where even man finds difficulty walking. It easily gets over sand, mud, mountain roads, snow, swamps, and rivers and climbs ice-bound mountains, for which it has earned the gratitude of investigators of the Antarctic.

The Soviet Union is making various types of trucks with pay loads ranging from 400 kilograms to over 12 tons. These sturdy general-purpose cars have won acclaim not only in the Soviet Union but also in many foreign countries.

The ZIL-150 truck can be seen with an ordinary body or as a dump-truck, a milk van, or with two trailers. It transports perishable food products and inflammable freight. Some of these cars have been adapted for the transportation of live fish to shops and restaurants.

The 10-ton YAAZ-222 dump-truck is now one of the most widespread cars in the country.

Another car, the 25-ton MAZ-525 is used to mechanize arduous earth work at big building sites.

The Minsk Auto Works is preparing for the production of the 40-ton MAZ-530 dump-truck, which will have a diesel motor and will be able to transport a whole carriage-load of freight. In the near future the Soviet automobile industry will be putting out new types of dump-trucks with the mechanism tilting the body to right and left or in any one of three directions, autocisterns and other special-purpose cars with pay loads of 50 and 60 tons.

The use of cars of this kind for long-distance runs on good roads will still further raise the importance of the automobile transport in the Soviet freight turnover.

Good roads are another requisite for the successful development of the automobile transport. Bad roads not only hold up the transportation of freight and cause tremendous losses of time but also shorten the life span of cars.

Prior to the Revolution most of the roads in Russia were simply cart tracks which were impassable in autumn and spring. There were very few motor-roads, but even those were narrow and were paved with cobbles.

Today the country is criss-crossed by numerous modern motor highways.

The Moscow-Simferopol, Kiev-Kharkhov-Rostov, Rostov-Mineralniye Vody-Orjonikidze, Minsk-Brest and other first class motor-roads were built in the post-war years. In 1957 there were over nine times



A MAZ-530 tip-up lorry

more hard surface roads than in 1913 and these totalled 225,700 kilometres in length. But this is not enough for a country as big as the Soviet Union and for that reason the construction of roads is progressing on an ever-growing scale. In addition to hard surface motor-roads that can let through tens of thousands of cars a day, the country has built and is building quite a few light surface roads designed for a few score or a few hundred cars a day.

The period from 1959 through 1965 will witness the building of 2.8 times more nationally important roads than in the preceding seven years. The roads leading in the most important directions will be paved chiefly with cement-concrete.

INLAND WATER-WAYS

The rivers are the oldest means of transport. The first steamboats began to ply the country's numerous water-ways more than 140 years ago. The importance of these water-ways was especially great when Russia's railways were at a low level of development. In 1913 the water transport accounted for 37.5 per cent of freight turnover. When other forms of transport began to develop, the share of the inland water-ways in the freight turnover fell to a certain extent, but the volume of their own freight turnover has increased three-fold in Soviet years.

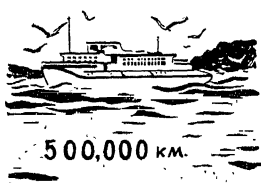
One of the advantages of the water transport is the relative low cost of carrying freight. The mean cost per ton-kilometre in 1956 was: rail-

ways—3.7 kopeks; general-purpose river transport—3.1 kopeks; maritime transport—2.7 kopeks.

In the Volga-Kama Basin transportation by water is cheaper than by railway:

for oil-products 3 times,

for timber (rafts) 6 times.



In the U.S.S.R. nearly half a million kilometres of rivers can be used for shipping and for rafting timber. This is more than in any other country.

The inland water-ways are served by the river transport.

Tsarist Russia had a comparatively big fleet of river vessels. In 1913 this consisted of 5,556 steam and motor vessels with a total capacity of 1,098,000 h. p., and 24,151 non-self-propelled vessels with an aggregate pay load of 13,500,000 tons. But the carrying capacity of this fleet could not be utilized to the full extent because of the neglected state of the entire river economy. Pre-revolutionary Russia did not have a single equipped river port. Even in the big Volga towns with their heavy freight traffic ships were usually moored directly to the bank and the cargoes were unloaded manually by artels of stevedores.

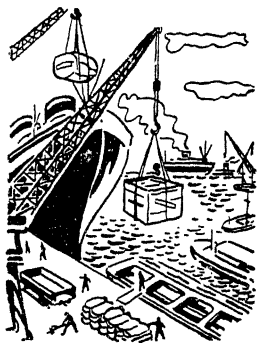
In our day the profession of stevedore has become outworn. Modern river ports are equipped with highly-productive means of mechanization: powerful gantry cranes that rapidly load or unload ships with a small outlay of physical labour.

The Soviet river fleet has new tugboats, self-propelled freight and passenger ships and non-self-propelled barges. The motor ship, which is run at half the cost of a steamboat, is becoming the main type of vessel in the U.S.S.R.

The Krasnoye Sormovo Works, Gorky, is building motor freighters with a pay load of 2,000 tons for use on big rivers. Loaded to capacity they sail at a speed of 17 kilometres an hour. On through-trips along the Volga from Moscow to the Caspian or the Sea of Azov they cover more than 3,000 kilometres in seven and a half days.

A growing number of metal barges carrying up to 3,000 tons of freight are being used on reconstructed inland water-ways.

New types of freighters are being designed: a 1,600 h. p., 5,000-ton motor freighter for coal, timber and other bulk freight in the Volga-Kama Basin; an 800 h. p., 1,000-ton motor vessel for rivers with swift currents; a 1,200 h. p., 4,000-ton river tanker, and other freight-carrying vessels.



The Soviet Union is building not only big but also small vessels for the lesser rivers. Take as an example the small, comfortable motor vessel built for collective farmers by the Sormovo workers. It was launched in 1956. It has a draught of only 60 centimetres, which means that it can sail on a river that can be forded. In spite of its small size (nearly 24 metres long and 3.5 metres wide) it carries, besides passengers and hand-luggage, 22 tons of freight in its hold.

Until only a few years ago, the life of the river ports used to come to a standstill as soon as the rivers became ice-bound. This state used to last until spring. Now many ports operate all year round thanks to diesel-electric river ice-breakers. These ice-breakers have also made it possible to prolong the period of navigation in big storage lakes where ice forms earlier and melts later than on the rivers. In size the ice-breaker is not big (48 metres long), but it is a very powerful ship: it is fitted with two 900 h. p. diesel engines. Cutting a thick covering of ice this small vessel leaves behind it a channel of more than 11 metres in width, which is wide enough for large motor freighters.

The first of the 1,800 h. p. diesel-electric ice-breakers have been working in the Volga Basin for several years.

The Soviet river passenger fleet has also been considerably renewed. The water-ways of the Volga and Siberian basins are plied by handsome powerful diesel-electric and comfortable three-deck motor vessels that sail at a speed of up to 25 kilometres an hour. For example one of the ships on the Moscow-Astrakhan route is the *Lenin*, a freight and passenger three-deck motor vessel which carries 500 passengers. Its speed is 27 kilometres an hour.

In 1957, the Krasnoye Sormovo Works built the *Raketa*, the first Soviet passenger hydrofoil motor vessel designed for fast passenger transportation on local lines. When the *Raketa* is in movement the hydrofoils skim over the water keeping the hull above the surface. Sharply cutting down the resistance of the water, this allows the vessel to develop a speed of up to 60-70 kilometres an hour. The vessel has 66 soft seats with tilting backs, a snack-counter and a covered promenade deck on the stern. The crew consists of three men. At the moment designers are working on a similar vessel that will carry both freight and passengers.

The new vessels are fitted with centralized remote control of the main engine from the navigation bridge and with echo sounding apparatuses.

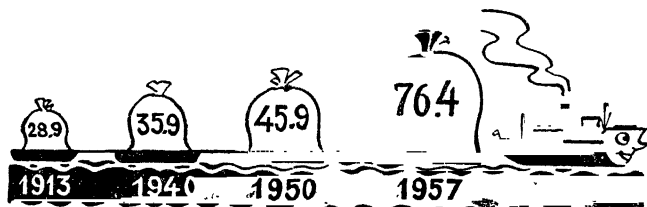
This technical re-equipment of the river transport is allowing its freight turnover to grow rapidly.

In 1958 the freight turnover and the volume of goods transported by the river transport was 12 per cent greater than in 1957.

New canals, the water-ways that have been deepened in connection with the building of hydro-power stations, and the big new storage lakes are of great importance for increasing the volume of the freight carried by the river transport. The White Sea-Baltic, the Moscow and the Lenin Volga-Don canals have converted the rivers of the Volga, North-Western and Don basins into a single water-way system and linked them up with the southern seas of the European part of the U.S.S.R. The navigable length of the Soviet inland water-ways now

GROWTH OF THE FREIGHT TURNOVER OF THE GENERAL-PURPOSE RIVER TRANSPORT *

(000 million t./km.)



exceeds 132,000 kilometres. Future development will cover the rivers in the sparsely populated northern regions of the Soviet Union and also the numerous small rivers.

The freight turnover of the river transport will increase approximately 60 per cent within the coming seven years.

The Soviet Union is a great sea power. Seas wash the shores of its huge territory in the north, south and east. The *maritime transport* plays an important part in the national economy providing a relatively cheap means of transportation and communication between regions located at great distances from each other. The maritime transport carries most of the exports and imports.

In tsarist times the merchant marine belonged to a few private shipping companies (the Russian Shipping and Trading Company, the Northern Shipping Company, the Dobroflot and others) and to small ship-owners. It consisted of slow, technically outdated ships with, as a rule, a small freight-carrying capacity. In 1913, the total tonnage of the Russian merchant marine added up to only one million register gross-tons. This compelled Russia to charter a large number of foreign ships, for which more than 100 million rubles were spent annually.

The ice-bound seas in the north of Russia were one of the obstacles checking the development of the merchant marine. These expanses of ice, which were regarded as dead and economically useless, came to life in Soviet years.

In 1932, the epoch-making voyage of the ice-breaker *Sibiryakov* laid the beginning for a regular service along the Northern Sea Route, a water road linking the Atlantic with the Pacific across the northern seas. Ships plying this route now carry freight from the European ports of the U.S.S.R. to the mouths of the Siberian rivers and to the ports of the Far East.

In 1957 the freight turnover of the maritime transport was 4.67 times greater than in 1913, the volume of the transported freight amounting to 65,700,000 tons.

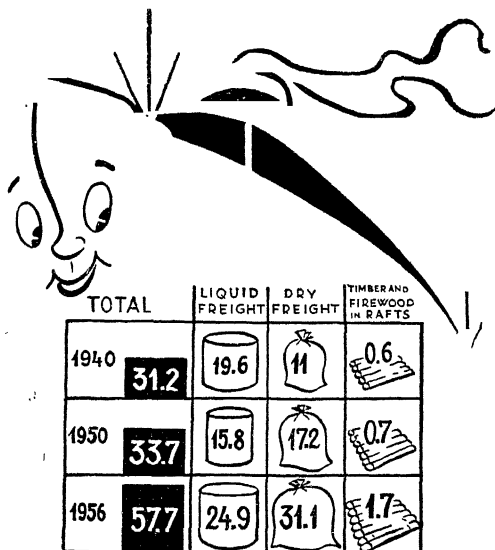
* This does not take into account the transport organizations that went over to the jurisdiction of the Ministry of the River Fleet of the R.S.F.S.R. in 1957.

Compared with 1957, the freight turnover increased 14 per cent in 1958 and in the coming seven years it will increase about another 100 per cent.

The foundation for these achievements was laid by the creation in Soviet years of a big merchant marine. The first big Soviet freighter, the 2,700 h. p., 7,550-ton motor vessel *Kim*, was launched in 1931. Since then Soviet ship-building engineering has been making rapid progress. The merchant marine is getting new, fast and economical modern ships, which include freighters, huge tankers, liners and powerful tugboats.

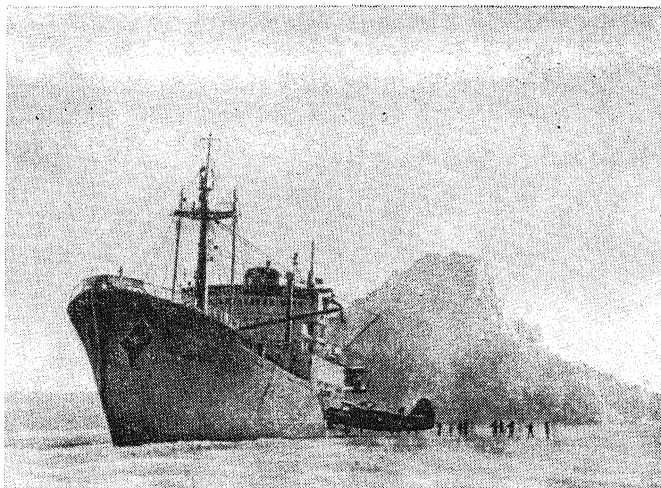
The Soviet Union is building diesel-electric freighters that serve simultaneously as ordinary cargo-carrying vessels and as refrigerator ships. Nearly 130 metres long and about 17 metres wide, these big

GOODS SHIPPED BY SEA
(million tons)



vessels are powered by four 1,800 h. p. multi-cylinder diesel engines and can develop a speed of up to 30 kilometres an hour.

The *Peking*, the biggest Soviet tanker with a displacement of 40,000 tons, was launched in December 1958. Designed for the transportation



Diesel electric ship *Lena*

of three kinds of oil-products, it carries 27,000 tons of fuel, replacing four ordinary tankers or 14 trains.

This tanker is 202.8 metres long and has a top speed of 32.8 kilometres an hour. The loading and unloading is completely automated.

In recent years the merchant marine received new comfortable passenger liners as well.

One of them, the *Lensovet*, a turbo-electric vessel, has been placed on the Black Sea run. It has comfortable cabins for passengers, spacious saloons, a library, a restaurant, a swimming-pool, a book kiosk and a post-office.

The Soviet turbo-electric ships plying international passenger lines have won the admiration of Soviet and foreign passengers.

A fleet of a new type of ice-breakers is playing an important role in ensuring an increased freight turnover on the Arctic route and in lengthening the period of navigation in the Arctic seas.

The Northern Merchant Fleet has been augmented with diesel-electric ice-breakers of the *Lena* type, which have given a good account of themselves, and timber-carriers designed for navigation in Arctic waters. The Soviet Union has built 22,000 h. p. diesel-electric ice-breakers.

The Nikolayev Ship-Building Yard has completed the *Sovetskaya Ukraina*, the new flagship of the Antarctic Whaling Flotilla. This motor vessel has a displacement of 44,000 tons.

ROADS IN THE SKY

On October 27, 1957 the Bolshoi Theatre received an unusual cable from Kamchatka. It was from I. I. Malyakin, Deputy to the Supreme Soviet of the U.S.S.R. and a Kamchatka fisherman, who asked the management to reserve a ticket for that night. Even in our age it might seem



incredible that anybody could cover the 8,000 kilometres between Kamchatka and Moscow in less than a day. Yet that is exactly what happened. A TU-104 with I. I. Malyakin on board, took off from Petropavlovsk-on-Kamchatka at 2.20 a. m. on October 27 and landed in Moscow at 7.29 p. m. of the same day. That evening saw Malyakin at the Bolshoi Theatre

enjoying Chaikovsky's opera *The Queen of Spades*.

This fabulous rate of travel over long distances has been made possible through the efforts of Soviet aircraft builders, who have created



and developed a fleet of airliners that from the technical point of view have no equal in the world.

In 1932, the 17th Conference of the Communist Party of the Soviet Union (Bolsheviks) set the task of developing all the basic forms of air transport as one of the major means of communication with remote areas and with big industrial centres.

As far back as at the close of the second five-year plan period (by 1938), the Soviet Union had the most developed network of air lines in the world.

In 1957 the length of the civil air lines increased 36 times compared with 1928 and 2.4 times compared with 1940.

Direct air lines now link Moscow with the capitals of all the Union republics, with large cities and industrial centres, with the spas of the Crimea and the Caucasus and with many foreign capitals.

The use of large numbers of fast, spacious turbo-jet and turbo-prop aircraft is making the air service one of the chief forms of passenger

transportation. The number of passengers carried by air will increase approximately six times in the course of the next seven years. More than 90 airports will be reconstructed or built anew to handle the latest types of heavy aircraft.

The air transport is now served by a fleet of fast civil aircraft built by an industry that arose in Soviet times. The pitiful inheritance that Soviet aviation received from tsarist Russia consisted of 300 obsolete aircraft and several semi-primitive assembly shops, which used to assemble aircraft from parts purchased abroad.

Scores of splendid types of passenger aircraft designed by Soviet engineers and built at first-class aircraft factories testify to the achievements that have been scored by Soviet transport aircraft building in the past 40 years. The history of its development is strikingly reflected by the career of Hero of Socialist Labour Academician A. N. Tupolev, an outstanding Soviet aircraft designer.

His first machine, built at the Central Institute of Aerohydrodynamics was a sports baby plane. This was followed by the ANT-2, an aircraft for a pilot and two passengers. This metal monoplane, developing a speed of 150 kilometres an hour, flew non-stop 750 kilometres in 1924, when it first took off from an aerodrome. For that year this was an unprecedented flight.

In 1929, Tupolev's ANT-9, christened *Krylya Sovetov*, flew in triumph to the capitals of Germany, France, Italy, Britain and Poland. In addition to the crew, it carried ten passengers and flew non-stop for distances of 1,000 kilometres at 195-200 kilometres per hour.

Two years later Tupolev designed the ANT-14 which accommodated a crew of five and 36 passengers. In 1934-39 he produced the ANT-20 which had six 750 h. p. motors. The speed of this aircraft was nearly 270 kilometres an hour and it carried 85 passengers.

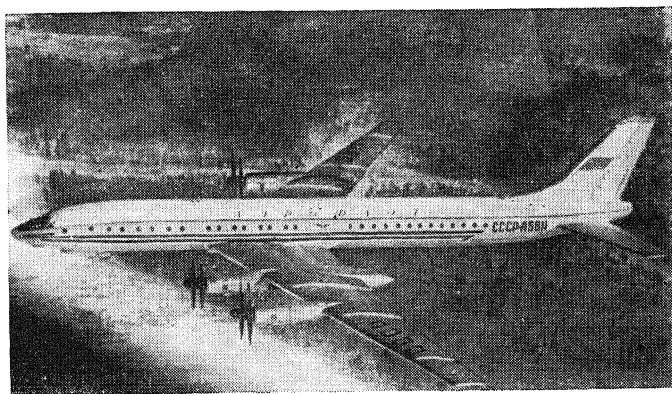
In 1936 Tupolev turned out the 10-passenger ANT-35 which had a top speed of 350 kilometres an hour. In 1937 Tupolev's ANT-25 carried the renowned Soviet airmen Chkalov, Baidukov, and Belyakov, and Gromov, Yumashev and Danilin on a non-stop flight from Moscow to the United States of America across the North Pole, bettering the then world distance record of 10,148 kilometres.

In the post-war period Tupolev designed several types of jet airliners.

The fast TU-104, which carries 50 passengers and their luggage, is used on long-distance home and international air lines. Fitted with two powerful jet engines and the latest radio-navigation and radar equipment, it flies non-stop for more than 3,000 kilometres at a cruising speed of 800 kilometres an hour. For the passengers there are comfortable seats, a radio, a snack-counter with a refrigerator and a kitchen with electric ranges for warming food.

In September 1957 Soviet airmen, piloting a TU-104 with a load of more than 20 tons, reached an altitude of 11,200 metres. This was a new world altitude and carrying capacity record.

The TU-104A monoplane is a development of the design of the TU-104. The new machine carries 70 passengers and in September 1957 it made an intercontinental flight from Moscow to New York across the



A TU-114

Atlantic Ocean, taking the Soviet delegation to the 12th Session of the United Nations General Assembly.

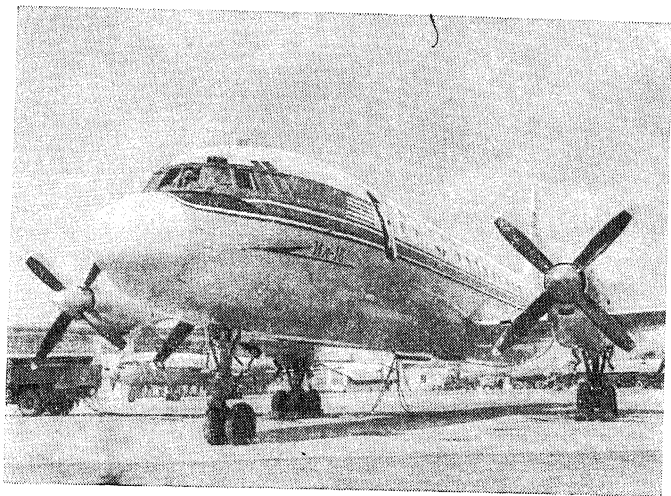
The TU-110 is an airliner with four turbo-jet engines. Carrying 78-100 passengers, luggage and mail, it serves long-distance home and international lines. Its range is 3,450 kilometres.

The fastest of the Soviet passenger aircraft, the TU-114, has four turbo-prop engines which are almost twice as powerful as any of the aircraft turbo-prop engines abroad. This aircraft can carry 170 passengers. On long-distance intercontinental flights the number of passengers is reduced to 120, but on short flights it transports up to 220 passengers.

The IL-12 and IL-14, which operate on almost all the principal home and international lines served by Aeroflot, have long ago won the respect of Soviet and foreign passengers. These aircraft were designed by S. V. Ilyushin.

Another of Ilyushin's aircraft, the IL-18, christened *Moskva*, first took to the air in 1957. The basic variant of this aircraft is designed for 75-100 passengers. It has four turbo-prop engines and cruises at 650 kilometres an hour. The aircraft is fitted with improved navigation instruments, which warn the crew of thunderstorms, of obstacles on the way and of approaching aircraft. Passengers sit in soft chairs at tables with lamps. The cabins have shelves for hand luggage.

Early in 1957, a group of Soviet designers headed by O. K. Antonov completed yet another fast machine, the *Ukraina*, which has four turbo-prop engines. This aircraft flies in all weather conditions by day or night at an altitude of 8,000-10,000 metres with 84 passengers and 3.5 tons of freight on board. Its cruising speed is 600-650 kilometres an hour. The tourist model of the *Ukraina* can carry 126 passengers.



An IL-18



A Yak-24 helicopter

O. K. Antonov has also designed an aircraft for short flights, which he christened the *Bee*. This small plane does not require special aerodromes: it can land or take from a strip 50-100 metres long. The *Bee* can be used against agricultural pests, in forestry work, and for geological expeditions.

Many other aircraft, including helicopters, are used in the Soviet Union. One of these, the YAK-24, known as the "Flying Carriage," was designed by Hero of Socialist Labour A. S. Yakovlev. Flying this machine, airman Y. F. Milyutichev took a load of four tons to an altitude of close to 3,000 metres, establishing the official world record.

FROM THE MAIL COACH TO THE PHOTOTELEGRAPH

If the transport lines can be called arteries then communications are the capillaries of the organism of the modern state. Without them no organized economic, cultural and political life is possible in a country.

The need for reliable means of communication was felt by the ancient peoples but in those days the problem was solved in an extremely primitive way. We know that the news of victory over the Persians in the Battle of Marathon was brought to Athens by a young warrior who ran more than 40 kilometres.

It was a much more complicated affair to organize regular communication in the territories of big states.

From the 13th century on, Russia had a system of postal stations served by coaches. Mail travelled a long time from one station to another until finally reaching its destination. The more remote areas of Russia used to be cut off from the outside world for years.

Means of communication developed side by side with the national economy. Yet on the eve of the First World War there were only about 8,000 post and telegraph offices throughout the Russian empire. Of these 80 per cent were in the European part of the country. In the vast expanses of Central Asia, Siberia and the Far East the mail coach continued to be a rare visitor.

As a rule, mail was delivered regularly only to the district centres. The towns and localities beyond these centres had to depend on chance travellers. Even in the central regions many villages were located 15-20 kilometres from the nearest post-office.

The telegraph and telephone service was in an even worse state of organization than the mail. There were only 125,000 kilometres of telegraph lines in a country with a territory encompassing a sixth of the globe, a country that had given the world remarkable inventors in the sphere of communications—Shilling and Yakobi, Popov and Shorin.

Telephones could be found only in big administrative centres. Inter-urban telephone lines ran in a thin thread, crossing the central regions only here and there and linking up Moscow with Petrograd and Kharkov, Rostov-on-Don with Novorossiisk, and several other towns among themselves.

But backward tsarist Russia was unable to set up a ramified, reliable system of electric communication. The production of communications apparatuses and equipment was in the hands of foreign firms. The only institution of higher learning in Russia training communications specialists was the Petersburg Institute of Electrical Engineering, which in the course of almost a quarter of a century, from 1891 through 1914, trained only 553 engineers for the Post and Telegraph Department.

The Great October Revolution placed the means of communication at the service of the people. Lenin's ardent appeals to the citizens of Russia and the historic decrees of the Soviet Government were broadcast by radio all over the country.

"Without a post and telegraph service and without machines, socialism is an empty phrase," Lenin said at a meeting of the All-Russian Central Executive Committee on April 29, 1918.

As the years went by communications changed beyond recognition as did other branches of the national economy.

In forty years of Soviet power the number of communications offices has increased nearly eight-fold. At the beginning of 1958 there were in the Soviet Union 58,280 post-offices, 46,599 of which were in rural localities.

In 1957 mail was carried along 450,500 kilometres of railways and 325,800 kilometres of motor-roads. Aircraft are now challenging the supremacy of the railways and the motor transport as mail carriers (more than 400,000 kilometres of mail routes are served by aircraft). In 1957 aircraft carried 76,800 tons of mail.

In 1957 the post-offices handled an average of 19 letters per inhabitant.

Communications lines stretch from the Far North and the Far East to the Pamirs and the Carpathians. The Soviet Union has a dense network of overhead and cable telephone and telegraph lines, which together form a single electric communication system. The principle on which this system is built up not only ensures communication between the centre and the outskirts but also between the capitals of the Union republics and other major industrial and cultural centres.

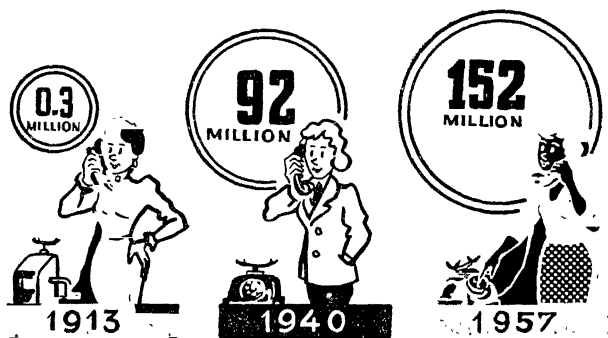
Today it is hard to imagine life without electric communication. The telegraph service, which is equipped with tele-type apparatuses, works round the clock.

The phototelegraph service, which allows transmitting printed matter in any language as well as blue prints and photographs without the direct participation of telegraphists, is likewise developing.

The inter-urban telephone network, which has, to all intents and purposes, been built up in the Soviet Union, has linked up all the republican, territorial and regional centres with Moscow and with their own districts.



The number of inter-urban telephone calls has increased immeasurably (million):



Imagine how complicated life would have been without telephones. The telephone is a reliable assistant in the home and at work. And we know how to value it: in 1958 the Soviet Union had 5,152 telephone exchanges (excluding exchanges at offices) in towns and the size of the urban telephone network increased 74 per cent compared with 1940. By that year telephones had been installed in 94.8 per cent of the machine and tractor stations, 96.4 per cent of the village Soviets, 94.8 per cent of the state farms and 74.2 per cent of the collective farms.

Electric communications have a big future before them. The Soviet Union is steadily expanding its network of trunk cables as well as of radio-relay lines, which are chains of small automatic radio stations that simultaneously channel hundreds of telephone calls, as well as telegrams and TV programmes.

In the next seven years the network of inter-urban cable communication lines will be doubled and the length of the radio-relay lines will be increased approximately 8.4 times. There will be 2.6 times more TV-broadcasting stations. The capacity of the urban telephone exchanges will be 50 per cent higher and in rural localities there will be radios and telephones in every village.

The training of communications engineers and technicians is excellently organized in the Soviet Union, which has seven communications institutes (one of which is an extra-mural institute) and 23 communications vocational schools (one extra-mural). In 1946-57 these institutes trained 10,422 communications engineers, and the vocational schools—34,105 medium-level specialists.

The Soviet Union's big transport and communications network is thus helping to shorten distances between the towns and villages and to unite them into a single organism.

THE MAP OF THE COUNTRY CHANGES

In 1921 V. I. Lenin wrote: "Look at the map of the R.S.F.S.R. To the north of Vologda, to the south-east of Rostov-on-Don and of Saratov, to the south of Orenburg and of Omsk, to the north of Tomsk, there are boundless areas big enough to contain scores of large civilized states. And over all these spaces patriarchalism, semisavagery and real savagery reign."

Nearly 40 years have gone by since then. What does one find to the north of Vologda today? There is the Cherepovets Iron and Steel Plant, built during the Fifth Five-Year Plan, there are mining centres on the Kola Peninsula, where the world famous Khibiny apatites are mined, a ship-building wharf and celluloid and paper combines.

What does one find to the south-east of Rostov-on-Don and Saratov? There are gigantic granaries, the metallurgical and machine-building plants of Stalingrad, the major textile centre of Kamyshin....

And what about the areas to the south of Orenburg and Omsk? This vast region is now the site of the Soviet Union's third largest coal basin, Karaganda, of large metallurgical, chemical and food plants, of millions of hectares of newly-cultivated virgin lands....

And to the north of Tomsk? There is the large port of Dudinka on the Yenisei River, Igarka, the lumber centre, and Norilsk, the northern metallurgical centre.

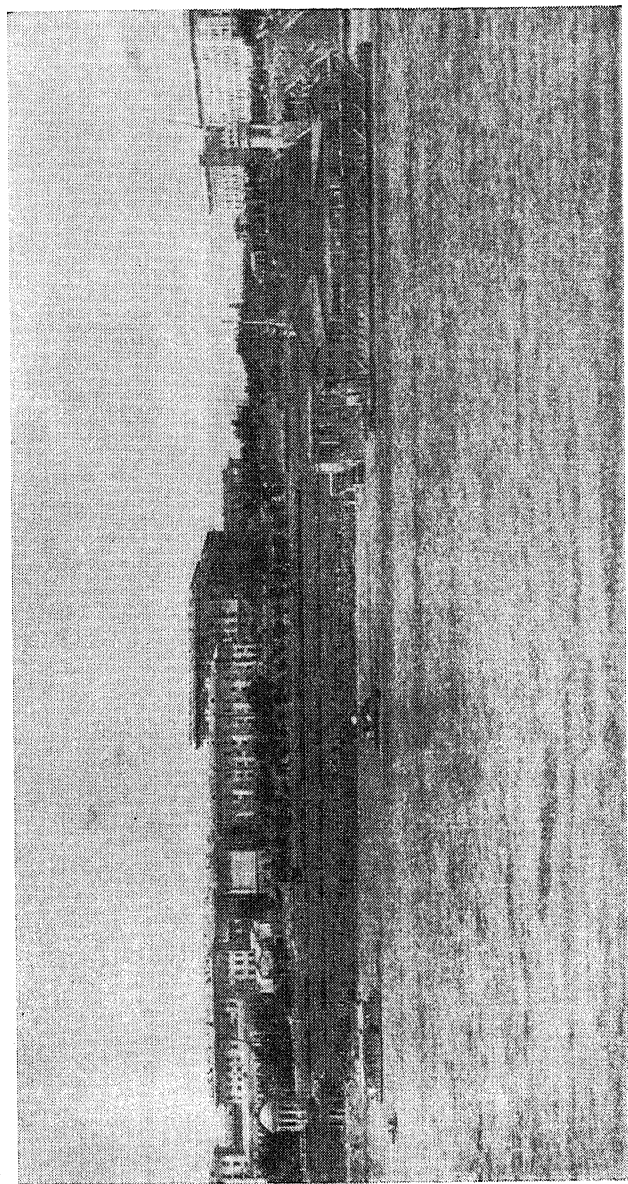
What was once old, patriarchal Russia is no more. Everywhere one feels the victorious march of industry, culture and progress. With each passing year the face of the country changes, changing, too, the face of regions which for centuries were completely undeveloped.

A MAP OF THE PAST

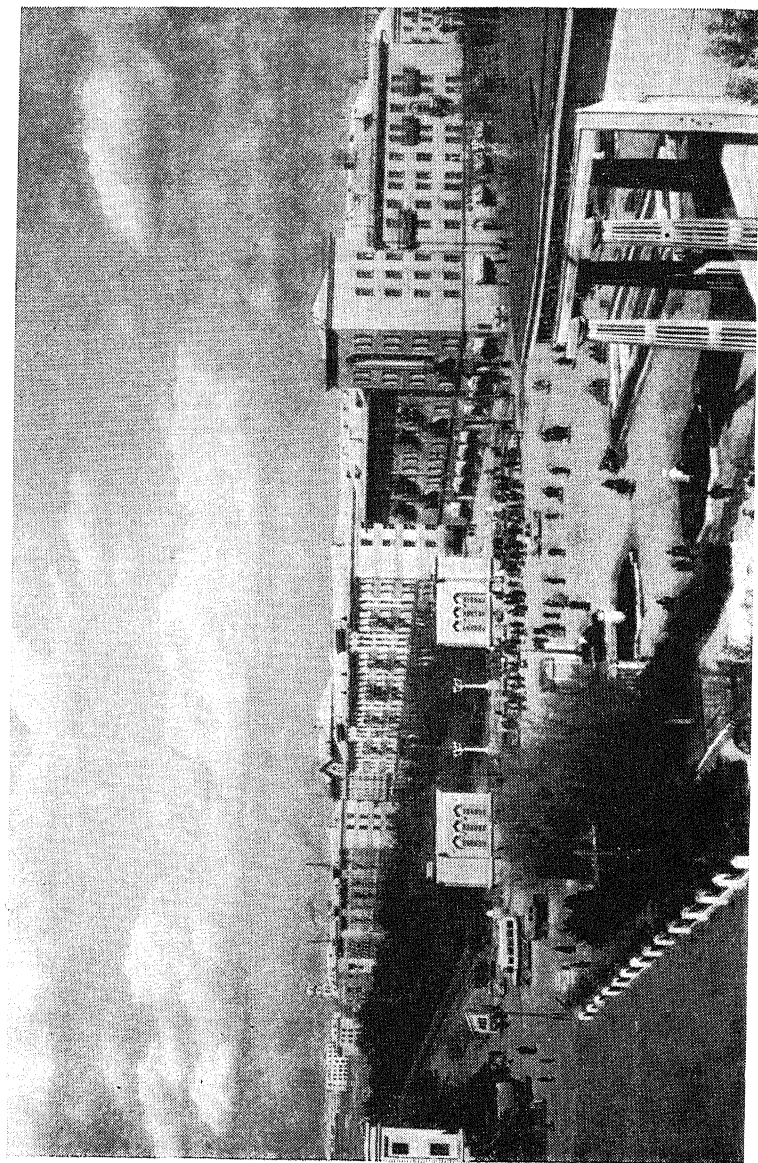
In old Russia there were considerable underdeveloped areas even in the European part of the country: these were in the harsh north (the Kola Peninsula and the Pechora Territory) and in the arid south-east. Across the great expanses of Eastern Siberia and the Far East the agricultural areas and small centres of domestic industry stretched out in a thin line along the Siberian Railway.

Prior to the Revolution, there was an acute lack of balance in the territorial distribution of industry.

Four industrial centres of European Russia—St. Petersburg, the central regions, the Donbas and the Baltic Regions—appeared as a



Stalingrad



Karaganda

group of small islands on the economic map of the country. However, they produced over 67 per cent of the gross industrial output of the country (spinning, weaving and machine-building). Eighty-seven per cent of all coal was mined in the South, as were 75 per cent of all iron ore and 69 per cent of all iron smelted. The oil-producing centre of Baku was a major industrial area. However, all other regions, and especially those located in the east, were extremely underdeveloped. The Urals, Siberia, the Far East and Central Asia produced but 8.3 per cent of the total industrial output of Russia; 3.9 per cent of this figure fell to Siberia and Central Asia, which together make up 75 per cent of the entire area of the country.

A MAP OF THE PRESENT

A planned socialist economy has made it possible to consistently realize the rational distribution of the productive forces, to bring industry closer to its sources of raw material and to the consumer regions, to bring new, untapped natural resources into the economic turnover. The socialist reconstruction of the economy was accompanied by the overall growth of industry and significant improvements in its geographical distribution.

This can be demonstrated by the move to the south (to the Caucasus and Central Asia) and the major move to the east (to the Urals, Western and Eastern Siberia, Kazakhstan and the Far East).

The Communist Party organized this great move of industry to the east because the country's chief natural resources, its greatest rivers, abounding in water power, its vast forests, its treasure-stores of iron ore, non-ferrous and precious metals are concentrated there. According to the latest figures, there is 20,000 times more coal in the area than what is burned by all the electric power stations of the world in the course of a year. In the east, too, is the nation's principal stock of arable land which the country is now turning into the largest grain and food supply area in the world. Finally, the natural geographic centre of the country is located in Western Siberia, a fact which makes the distribution of new industrial centres there both profitable and convenient.

With each successive year of each five-year plan, new industrial centres appeared on the economic map of the country. The Stalingrad Tractor Plant, the first-born of Soviet industry, was put into operation during the First Five-Year Plan; in the once desolate Southern Urals the blast-furnaces of Magnitogorsk went up; the Dnieper Hydropower Station, the largest in the world at the time, was built in the Ukraine. The Turkestan-Siberian Railway, the first "life-line" through the deserts, was laid across Eastern Kazakhstan. The large White Sea-Baltic Canal, the first of the country's many new water-ways, cut through



Karelia. In the arid desert on the shore of Lake Balkhash the furnaces of a giant copper-smelting works were set in operation; the shafts of the first coal-mines pierced the ever-frozen soil of the Pechora. The lights of the Ivankovo and Uglich hydro-power stations went on.

During the Second World War hundreds of new factories, plants and mines were built in the Urals, Siberia, the Far East, Kazakhstan and Central Asia.

Soon after the war, new dots appeared upon the map. Tractor plants were built in Vladimir and Lipetsk, in Rubtsovsk and Minsk; new automobile factories were put into operation in Kutaisi, Minsk and Ulyanovsk. New blast-furnaces in Rustavi near Tbilisi were lighted, hundreds of oil wells covered an area between the Volga and the Urals called the "Second Baku." Dashava natural gas from Carpathia and Stavropol gas from the Northern Caucasus was piped to Moscow along gigantic gas lines.

One after another the great hydro-power stations were commissioned; the Tsimlyanskaya, Kakhovka and Ust-Kamenogorsk, the first large power station in the East. The Lenin Hydro-Electric Power Station on the Volga, the largest in the world, began capacity production in 1958.

As a result of industry's move to the east, the entire country's production increased 3.5 times from 1940 to 1956, the corresponding increase for the separate regions being as follows:

The Volga area and the Urals	5.6 times
Western Siberia	6.3 times
Eastern Siberia	3.7 times
The Kazakh S.S.R.	4.5 times

At present the Volga area, the Urals, Siberia, the Far East, Kazakhstan and Central Asia produce over 60 per cent of the country's gross industrial output.

IN SOVIET KAZAKHSTAN

One of the principles of the new socialist distribution of productive forces is the economic development of formerly backward national regions. All the republics of the Soviet Union have achieved great success in developing their industries and agriculture. Kazakhstan was one of the most backward border regions of tsarist Russia. For centuries its vast steppes, stretching across a territory of nearly 2,000 kilometres, were completely barren, while its plentiful natural resources—coal, oil, and non-ferrous metals—were untapped. Industry consisted of domestic crafts for the primary processing of agricultural produce.

The new Kazakhstan, a rich and bountiful country, has emerged in the course of a single generation's lifetime. In the west of the republic oil was struck again near the old Emba River fields. In the east, in Leninogorsk and Zyranovsk, mines and non-ferrous metal plants sprang up. The stacks of the chemical and non-ferrous metal

plants of Chimkent and Jambul rose into the sky in the south; Alma-Ata, Chimkent and Petropavlovsk became large machine-building centres.

During the years of the five-year plans the lands in the north of Kazakhstan were turned into wheat fields which have increased immeasurably in the past few years.

As a result of the development of the virgin lands, the arable lands of Kazakhstan were expanded by 19.5 million hectares from 1954 to 1956, reaching a total of 27.9 million hectares.

The republic became one of the nation's major granaries.

Prior to the development of the virgin lands, the republic produced from 1,600 to 1,920 thousand tons of grain annually. The figure has now risen to nearly 16 million tons of grain annually.



SIBERIA TODAY

Socialist construction has completely changed the face of Siberia. Today it is one of the largest industrial and agricultural centres of the country. Its territory is twenty times the size of France.

Gone are the days when the word "Siberia" brought up visions of snow-swept hamlets lost in the frozen taiga. Pre-revolutionary

Siberia was a place of exile and hard labour. Today "Siberia" is synonymous with mines, blast-furnaces, the smoke-stacks of many factories and plants, busy cities and endless fields of grain. Much tin, gold, zinc and nickel are mined here. New plants produce aluminium and ferrous alloys, mining and agricultural machinery, boilers, tractors and river boats.

However, the new territory has just begun developing. Siberia is a land of the future. In the next ten to fifteen years it will become the largest metallurgical centre. A second west-Siberian metallurgical plant is being built in Kuzbas, to be followed by one in the Kras-

noyarsk Territory and one in Irkutsk Region.

The abundance of cheap electric power in the Angara-Yenisei Region will make it possible within the next few years to build power-



consuming electro-metallurgical and electro-chemical plants that will supply the country with high-quality metals and hundreds of various chemical products. The largest lumber-processing centre in the country is now under construction in Abalakov on the Yenisei. In the near future the region will be a major producer of plastics and synthetic fibres, using local lumber for raw material.

The 1959-65 Control Figures for the economic development of the U.S.S.R. provide for the further specialization and comprehensive development of the republics and the large economic-geographical areas as well. During the next seven years the chief improvements in the distribution of the nation's productive forces will be first of all towards the further rapid advance of the eastern regions. Over 40 per cent of all capital investments will be made in these regions, including the Urals, Siberia, the Far East, Kazakhstan and Central Asia.

The significance of the eastern regions in the national economy will increase greatly. By 1965 they will be producing approximately 44 per cent of the country's pig iron, 48 per cent of its steel, 49 per cent rolled metal, nearly 50 per cent coal, 30 per cent oil, 46 per cent electric power and over 45 per cent of its sawn timber.

The Seven-Year Plan provides for:

- the construction of a third huge iron and steel centre, based on the recently discovered deposits of iron ore in Siberia and Kazakhstan;

- the further development of non-ferrous metallurgy in Kazakhstan, Central Asia, the Urals and the Transbaikal Area, all based on the tremendous deposits of raw materials in these areas;

- the considerable development of the power industry of Siberia, using the cheap coal of new deposits;

- a rapid increase in oil and gas production in the area between the Volga and the Urals and the creation of a new gas industry centre in Uzbekistan;

- an increase in the tempo of development of the chemical industry, particularly in the eastern regions;

- the expansion of timber felling in the forest regions of Siberia and the Far East.

Every possible effort will also be made to speed up the development of the productive forces of the European part of the Soviet Union. This will be achieved through the expansion of the raw material base of the ferrous metal industry in the Centre and the South by utilizing the rich deposits of iron ore in the Kursk Magnetic Anomaly and the Ukraine, the intensified development of the oil and gas industry of the North Caucasus and the Ukraine, and the chemical industry, based on oil in many other areas.

NEW CITIES

Due to the economic development of new territories and the emergence of new industrial centres, the number of cities and towns has grown accordingly. From 1926 to 1957, 618 new cities and 1,175 towns



Komsomolsk-on-Amur

have sprung up in the U.S.S.R., most of them in the eastern regions and the formerly desolate Far North, deserts and mountains, at the sites of new mining centres, factories, railways and canals.

Magnitogorsk, a city built beside a gigantic iron and steel works, stretches for many miles along the Ural River. Its population is 311,000. The city of Mingeaur has risen along the banks of the Kura River in Azerbaijan, near the construction site of a hydro-power station. In the course of a few years the small taiga village of Permskoye was transformed into the city of Komsomolsk-on-Amur, named in honour of its builders, all members of the Young Communist League. The city has now become one of the large industrial centres of the Far East. It services the railways and has a metallurgical plant and several lumber mills. Its population has now passed the 170,000 mark.

In 1929 a new city, the city of Khibinogorsk, arose in the Khibiny mountains on the Kola Peninsula. It was renamed Kirovsk in 1934. Kirovsk is now a large industrial centre of the Soviet Far North, the largest world apatite centre, supplying the superphosphate factories of the country with raw materials for the production of phosphoric fertilizers.

Olyenogorsk is one of the youngest cities of the Kola Peninsula. Eight years ago silence reigned supreme here, but today explosions rock the air on Olyenya Mountain, where iron ore is being mined for the large concentrating factory nearby.

Murmansk is one of the largest sea ports in the country, a fishing centre that has changed during the years of the five-year plans from a

small log cabin settlement with a population of 3,000 to a city of 226,000, a figure that exceeds the population figure for Iceland.

The large city of Igarka, the "lumber capital" of the Siberian Far North, stands where but thirty years ago there were nothing but virgin forests. Each year dozens of ocean steamers take the products of its lumber mills all over the world.

Stalinogorsk, Elektrostal, Sumgait, Angarsk, Bratsk, Zhigulyovsk and Magadan are but a few of the many cities that have appeared during the years of Soviet power.

The economic map of the country has changed beyond recognition in the past forty years. It is changing ever more rapidly at present. No sooner does a map-maker add new industrial sites to his map than dozens of new plants go into operation. The most accurate map today becomes incomplete tomorrow.

Everything for the People

LABOUR AND WAGES

Work is the basis of society's existence, a means by which man masters nature, making its endless forces subservient to him.

The victory of socialism changed labour from the staggering burden it was and is under conditions of exploitation and made it free. For the first time in history the working man has won the right to work for himself and for the society in which he lives.

If one's labour is to bring satisfaction and joy, it must be not only free and productive, but well paid and safe, and it must leave a person enough time for rest, his private life and an opportunity to make use of his country's cultural treasures. From the very day it came into being, the Soviet Government turned its attention towards:

- the over-all reduction of the working day and especially the reduction of working hours for young people under 18 and people employed in harmful and arduous industries;

- providing all industrial and office workers with paid yearly vacations;

- organizing safety measures in every branch of industry.

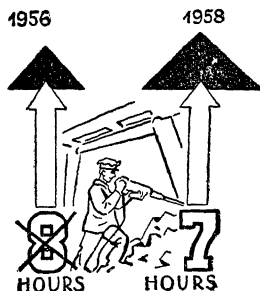
SHORTER WORKING DAY, PAY UNCHANGED

On October 29, 1917, the Council of People's Commissars established the eight-hour working day and curtailed overtime work. Now, due to the high level of productivity and the sharp rise in all branches of the economy, it becomes possible to further shorten the working day.

In March 1956 a six-hour working day was established for Saturdays and days preceding holidays. On July 1, 1956 a six-hour working day was established for youths of 16 to 18 and a four-hour working day for youths of 15 to 16.

In 1957 Ukrainian coal workers employed underground and workers of most ferrous metal plants were switched to a shorter working day; this change affected nearly eight million workers, engineers and technicians by the end of 1958. In 1957 working hours in Soviet industry averaged 7.9. In 1959 the industrial and office workers of several branches of heavy industry will be fully transferred to a shorter working day.

By 1960 the transfer of industrial and office workers to a seven-hour working day, and of workers in the key occupations in the coal and mining industries, working underground, to a six-hour day will be completed.



The Control Figures for the Seven-Year Plan provide for the gradual change-over, beginning with 1964, of industrial and office workers to a 30-35-hour week. This means a five-day working week with two full days off. As a result, the U.S.S.R. will have the shortest working day and the shortest working week accompanied by a considerable rise in wage scales.

Workers in tsarist Russia had a ten-hour working day.

The shortening of the working day in the U.S.S.R. is bringing about a rise in the productivity of labour. It lightens the worker's labour and increases his time for rest, study and family life.

With the introduction of a seven-hour working day, the per hour output of Donbas miners increased in 1958 nearly 20 per cent as against 1956, so that today each miner produces more coal in seven hours than he did before in eight.

WORKING CONDITIONS MUST BE SAFE AND EASY

All means are being taken in the socialist society to make working conditions as safe and easy as possible. Automation and mechanization are two major steps in achieving this goal.

New machinery is being installed in Soviet plants not only to increase the productivity of labour, but to transfer the greater part of the work-load to them, leaving as little as possible to the workers.

Automation and mechanization have made old skills obsolete and new skills, demanding a high degree of technical and general knowledge, are being created. The list of "dead" skills is very long, indeed, and it is growing longer with each passing year.

The labourer and his shovel have been replaced by an excavator. The heavy toil of the wood-chopper has been replaced by electric and gasoline saws; by heavy caterpillar tractors, skidders and other machinery. The work of loaders in machine-building and metal-working shops has been replaced by cranes and hoists, as have the many back-breaking tasks in every branch of industry. The number of crane and hoist operators on construction jobs has grown considerably, with the 1954 figures nine times that of the 1948 figures.

Working conditions in the light and food industries have also changed drastically. Prior to the Revolution the work of bakers and

fishermen, of those in the meat, cotton and confectionery trades was extremely difficult. Now these fields of the economy are fully mechanized and make great use of automation.

The Moscow Krasny Oktyabr Confectionery Factory is an old concern. It was remodelled during the years of Soviet power and equipped with modern machinery. The shops are clean and light. Machines do all the work.

The workers in the hard candy shop wear white smocks. The machines and windows sparkle. There is very little for people to do here, as two workers service an entire automatic line. The packing machines wrap over 2 million candies per hour.

What were the working conditions in the confectionery trade before the Revolution? Following is an excerpt from a book by N. Lyashko entitled *Sweet Hard Labour*:

"Flames from the cooking oven in the hard candy shop lick the bottoms of the copper kettles from dawn to dusk. Smoke from the drops of sugar burning on the stove, steam and coal gas pour into the shop and mingle with the acrid vapours of essences and lemon acid and the smell of the candy fillings. The sticky, spicy air dries the mouth and throat, it makes the eyes tear and the head swim."

The Soviet Government sets strict norms and rules for labour safety measures which the trade unions and the various economic bodies supervise and control. If the administration of a given establishment does not fulfil these safety requirements, it is brought to court as a criminal offender.

Six institutes for labour protection of the All-Union Central Council of Trade Unions and 10 institutes for the hygiene of labour and occupational diseases study the problem of working conditions in industry and agriculture in the U.S.S.R.

Many plants provide special clothing, footwear and safety devices (masks, eye glasses and respirators). Workers in trades detrimental to health enjoy special privileges. They receive higher wages, additional vacations, have a shorter working day, higher pensions and free special diets. From 1956 to 1958 the government spent 8,800 million rubles on labour protection measures and 13,500 million rubles on special clothing issued free of charge.

BETTER OFF TOMORROW THAN TODAY

One of the basic principles of socialism is equal pay for equal work. Women receive the same wages as men, and people belonging to different races all receive the same pay for the same work. The existing wage system is so devised as to take into account the amount and quality of work done. Industrial and office workers are paid either by the *piece* or by the *hour*.

Approximately three-quarters of all industrial workers, nine-tenths of all construction workers and practically all agricultural workers are paid on the basis of piece-work, making it possible to relate the wages to the work accomplished.

Some branches of industry have what is known as a progressive

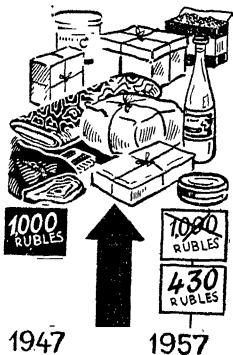
piece-work system; this means the value of each unit produced above the norm increases progressively.

Workers on an hourly wage and, in some instances, piece-workers, often receive bonuses for fulfilling the plan, improving the quality of production, economizing on fuel and other items. At all times the worker has a material interest in increasing the quantity and raising the quality of his labour and of the plant as a whole, for the more his factory, plant or collective farm produces, the more he himself receives.

Increasing public wealth makes for the higher standard of living, for higher wages and incomes.

During the past few years workers in the ferrous, non-ferrous metal and chemical industries, miners, construction workers, medical personnel and other categories of workers have all received pay increases.

In January 1957 all lower-paid workers received an average pay increase of 33 per cent, with the non-taxable minimum wage increased accordingly.



The rule that the productivity of labour always be ahead of the rise in wages is strictly adhered to. To do otherwise would mean to hinder the further development of industry and increase the expenditure per unit of production. This in turn would call for a rise in prices and would therefore be a blow to the consumer.

However, a better indication of the standard of living is not a monetary one, but that of the real value of wages, or the services and commodities an industrial or office worker receives for his wages.

Due to seven successive drops in prices since the end of the war, commodities and foods which in 1947 cost 1,000 rubles, cost 430 rubles in 1957. In other words, the drop in retail prices brought about a 57 per cent rise in real wages.

THE INCREASE IN REAL WAGES OF SOVIET INDUSTRIAL AND CONSTRUCTION WORKERS IN 1956 AS COMPARED TO 1913

Real wages of workers	3.4 times
Real wages, considering the absence of unemployment	3.7 times
Real wages, considering the shorter working day	4.8 times

In 1958 the real wages of Soviet industrial and office workers (considering pensions, grants, free education and free medical service) increased nearly two-fold as compared to 1940.

The incomes of collective farmers have risen sharply. In 1956 the incomes of collective farmers received in cash and in kind from the collective farm and from their own personal plots and livestock (excluding taxes and assessments) increased four-fold as compared to 1913.

In 1957, due to the rise in prices of goods sold to the state, the collective farms and farmers received nearly 50,000 million rubles more than they did in 1952.

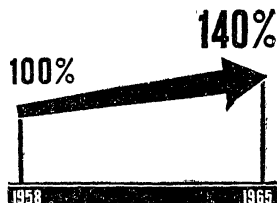
In 1958 the real incomes of collective farmers per working person increased more than twice, as compared to 1940.

Beginning with 1958, the personal holdings of collective farmers, industrial and office workers have been completely freed of obligatory deliveries to the state with the resulting gain of over 3,000 million rubles for the population.

The above facts indicate that under socialism the real incomes of the working masses are constantly increasing. A drop in retail prices, a rise in nominal wages, or a decrease in taxes—whatever the means, every Soviet worker knows that he will be better off tomorrow than he is today, and that his standard of living can only go up.

The Control Figures of the Seven-Year Plan best prove the above. According to these figures, by the end of 1965 the real incomes of industrial and office workers, per working person, will increase on the average by 40 per cent as a result of the rise in wages, pensions and grants and price reductions in public catering. The real incomes of collective farmers will also increase no less than 40 per cent, due chiefly to a rise in farm production.

REAL INCOMES OF WORKING PEOPLE IN TOWN AND COUNTRY



FOR THE PEOPLE'S WELFARE

The real incomes of industrial and office workers and collective farmers are not restricted to their wages or to pay for work-day units. They all receive additional sums from the state through many various channels.

These are: social security benefits, pensions, stipends, paid vacations, free education, free medical care, etc.

THE INCREASE OF PENSIONS AND GRANTS

(000 million rubles)

1940	42	1957	202
1950	122	1958	over 215

These government pensions and grants increase a worker's income by approximately one-third.

CARE, NOT CHARITY

"... The worst calamity for the people of my country was old age," said Tursun Zadeh, a writer and deputy of the Supreme Soviet. "The proud people of Tajikistan did not fear death, they feared the coming of old age. No matter how much a person worked, no matter how great the treasures he may have created in his lifetime, hostility and darkness awaited him, he would become a burden to his own family, to his children and grandchildren, for no one would need him any more."

Everywhere in the great country that was tsarist Russia working men lived in constant fear of being thrown out of their jobs, in fear that what awaited them at the end of the road was old age and starvation.

Immediately after the October Socialist Revolution the Soviet Government passed resolutions on a number of basic problems concerning social security. These were: increased pensions for workers who had suffered injury on the job; special allotments for Red Army men and their families, etc.

Every type of charitable organization was abolished. Questions of social security were placed under government jurisdiction. The People's Commissariat of Government Charity was renamed the Peo-

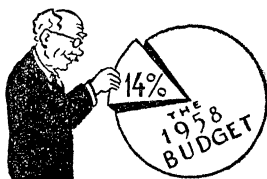
ple's Commissariat of Social Security. A decree signed by V. I. Lenin stressed the fact that the old name did not conform to a socialist understanding of the problems of social security and, therefore, a change of name was a matter of principle. Public aid to those unable to work, once a form of charity and hand-outs, thus became a major government undertaking.

Social security in the U.S.S.R. is achieved through government and public funds exclusively.

At present nearly 20 million people receive government pensions, as compared to one million in 1920.

The state paid out 30,100 million rubles in pensions in 1955, 58,800 million in 1957, and 64,000 million in 1958.

In order to receive a pension, a Soviet worker neither contributes part of his wages nor makes payments from his personal savings. Industrial and office workers' pensions come from the government's social security budget, formed from insurance payments contributed by factories and offices. The state also appropriates sums for allotments for military personnel and students, as well as for personal pensions. Fourteen per cent of the 1958 budget went for social security needs.



According to the terms of the new pension law, adopted in July 1956, *every industrial and office worker* who has reached the required age (60 years of age for men and 55 for women) and has the necessary tenure (25 years for men and 20 for women), *has the right to receive a full government old-age pension*. Those who do not qualify in respect to tenure receive part of the general pension, but not less than one-quarter. In some cases old-age pensions are granted earlier, at 50 to 55 for men and at 40 to 50 for women.

Old-age pensions in the U.S.S.R. amount to 50-100 per cent of a person's actual pay. The lower his pay, the higher the rate of the pension he will receive. This makes it possible to lessen the difference between the largest and smallest pensions. The full minimum old-age pension cannot be less than 300 rubles a month. On the average, it comes to 60 per cent of a person's wages. Pensions are tax-free.

In the U.S.S.R. pensions are usually calculated on the basis of the average wages received for the last 12 months of work. If, for any reason, a person received less pay during his last year at work than at some other time during his life, he may choose five consecutive years within the last decade from which his pension will be calculated.

The amount of a pension is decided upon in each individual case, taking into account the pensioner's life and working conditions. For instance, two men of the same age with the same tenure who worked under the same conditions differ in that one has no family and the other has dependent children. Obviously they should not receive the same pension. Thus, the law provides for family allotments.

Additions to the basic pension are granted for uninterrupted service and in cases where there is an invalid in the family. These increases can amount to 30 per cent of the basic pension.

People who work underground or in unhealthy working conditions, in hot shops and in other difficult jobs receive higher pensions.

Every dependent member of a family that has lost its breadwinner also has the right to receive a pension. A person's lawful dependents are his children, brothers and sisters under the age of 16 (18 in the case of students), parents, grandchildren, grandparents and also an able-bodied wife or husband or parents who are compelled to care for the children of the deceased.

Children who have lost one parent have the right to receive a pension regardless of whether or not the other parent works. They continue to receive a full pension even though they study and receive a government stipend.

Members of collective farms and fishing co-operatives receive pensions from their place of work in accordance with their incomes.

The state does more for its pensioners than give them pensions. They also receive: free medical care; accommodations at sanatoriums and spas: from 1950-1955, 125,000 pensioners vacationed at the expense of the social security organizations of the R.S.F.S.R.; pay for any work they do; grants and special privileges in jobs, studies and household and cultural services.

Social security organizations and producers' co-operatives (special co-operatives of invalids) are responsible for placing and training persons who have become semi-invalids.

Whenever required, pensioners can live in old-age or invalids' homes on full government maintenance. In 1957 there were over 135,000 old people and invalids living in 1,055 such homes.

Often, persons who have reached the required age do not wish to leave their work and continue at their jobs. The word "pensioner" does not necessarily mean feebleness and frailty. There are many healthy, sturdy pensioners, and this is no accident, for in the Soviet Union a person's health is no longer his private affair.

THE BATTLE FOR HEALTH

Protection of its people's health is of major importance to the Soviet state. Numerous scientific organizations, a great network of hospitals and clinics and an army of doctors are advancing along the whole front of sickness, taking part in the battle for the people's health.

There are 346,000 doctors in the Soviet Union. In Azerbaijan there is one doctor to every 440 people.

There were only 23,100 doctors in tsarist Russia, with one doctor to every 10,000 people. Thus, 40 years after the victory of the Socialist Revolution, a country which was practically deprived of medical service, has now taken first place in the world in providing medical care for its people.

Prior to the Revolution, the Chekhov District of Moscow Region had 35 hospital beds and 3 doctors.

In 1957 the district had: 60 doctors, over 200 nurses and other medical personnel, nearly 300 hospital beds, 2 out-patient clinics, 10 assistant doctors' stations, 10 year-round nurseries for 405 infants, a bacteriological laboratory, 7 clinical laboratories, an epidemiological station, 5 chemists' shops and 8 auxiliary chemists' shops, 6 X-ray and 8 physiotherapy offices.

In 1957 the state allocated 5,381,000 rubles for the health needs of the district.

The Soviet Union is the first country in the world to provide all type of medical care—from treatment of a light bruise to the most complicated operation and long-term treatment, at times of many years duration—completely free of charge. Moreover, while a worker is disabled, he receives a government allowance for temporary disablement. Thousands of millions of rubles are allocated yearly for health needs. The 1957 figure was close to 40,000 million rubles.

In the towns and villages of the country there are over 160,000 various medical and disease-prevention clinics. All these are completely government-subsidized.

New hospital construction in the next seven years will double the existing number of hospital beds.

The Soviet Union's health programme is something a working person in tsarist Russia could only dream about. Then, only six cities had privately-subsidized ambulance services which obviously could not attend to all accidents.

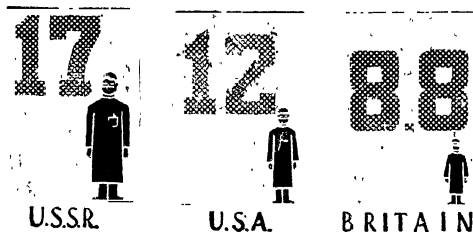
In every city of the U.S.S.R. and in many districts and workers' settlements there is a 24-hour ambulance service which attends to every single call free-of-charge.

Thousands of ambulance planes carry health and new life to the population. They bring professors, consultants, surgeons and epidemiologists to the most remote corners of the country; they evacuate the sick to clinics in regional centres; they transport medicines, serums, anti-biotics, canned blood and oxygen tanks. The doctors are ready to work under any conditions. If there is no place to land, the doctor parachutes down to relieve the sufferings of the patient. Every region of the U.S.S.R. has its own medical air station.

Public health organizations carry on the battle for health not only in medical establishments, but right in the factory shops. Many plants and factories have their own medical centres.

At the Moscow Likhachov Auto Works 13 professors and candidates of medical sciences, 142 doctors and 250 assistant doctors, obste-

NUMBER OF DOCTORS PER 10,000 INHABITANTS



tricians and nurses attend to the needs of the workers. The factory clinic has specialists in every field and is equipped with the latest medical apparatuses. New medicines and methods of treatment are widely used. There are 18 medical stations in the shops. The plant's annual health budget increases constantly and at present stands at 6 million rubles.

The Likhachov Auto Works is not a rarity. Wherever Soviet people live and work, in the largest industrial centres and in the small workers' settlements, medical workers are constantly on the watch to keep them in good health.

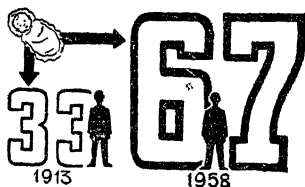
It is easier to prevent illness than to treat it. The community and the sanitary inspectors see to it that the towns and villages have the required sanitary standards and are carrying out the necessary sanitation measures.

The staffs of 350 scientific research institutes, laboratories, medical institutes and advanced training institutes for doctors carry on the battle for public health. The Academy of Medical Sciences of the U.S.S.R., the highest scientific body in the field of public health, coordinates all research being done in the country.

The scientific discoveries of Soviet researchers have enriched medical science. The world-famous physiological teachings of Academician I. P. Pavlov began a new era in natural science, in the theory and practice of medicine.

In the U.S.S.R. the latest medical discoveries are soon put to general use. The method of tissue therapy developed by Professor V. P. Filatov, the method of reviving an organism in the stage of clinical death suggested by V. A. Negovsky and his colleagues have found wide acclaim in many Soviet clinics and hospitals. Many large clinics now perform life-saving operations on patients suffering from congenital heart disease. Professor A. N. Bakulev, now President of the Academy of Medical Sciences of the U.S.S.R. and Lenin prize winner, was the first to successfully perform this operation in 1948.

As a result of the noble battle for health, the population's health as a whole has improved and the average person's life span increased.



Diseases which were once of an epidemic nature have now been entirely conquered in the Soviet Union. Among them are: cholera, the plague, smallpox, and relapsing fever; the number of cases of tuberculosis, malaria, venereal diseases, etc., has decreased sharply.

The U.S.S.R. has the lowest death-rate in the world. As compared to pre-revolutionary times, it has decreased four-fold, with the average person's life span increasing from 33 years in 1913 to 67 at the present time. Infant mortality has decreased seven-fold during the same period.

From 1950 to 1955 the population of the U.S.S.R. increased by 16,300,000, a figure that exceeds the combined population figures for Sweden, Norway and Finland.

THE HEALTH RESORTS RECEIVE VACATIONERS

The correct organization of one's rest is also of great importance in strengthening a person's health. The Soviet state provides every working person with an annual paid vacation of from two weeks to two months, ensuring all the necessary conditions for a full and well-planned rest. The doors of sanatoriums and rest homes are always open for industrial and office workers in need of rest or medical care.

Prior to the Revolution a worker could never dream of living at a resort. Most resorts were privately owned and accessible only to the wealthy.

In 1917 the resorts of Russia accommodated 3,000 people. These resorts were the famous Caucasian spas, Staraya Russa, Lipetsk, and the Sergiyevskiye spa. The Black Sea coast along the Caucasus with its wonderful hydrogen sulphide springs was terribly underdeveloped. Sochi was a provincial town that had neither a water system, sewers, nor a single paved street.

Now Sochi is the centre of a large resort area, stretching for nearly 30 kilometres along the Black Sea coast. Sochi and the adjacent Matsesta spa

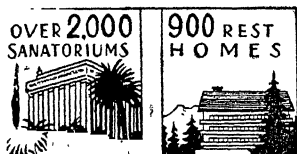
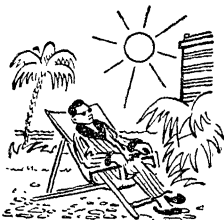
are justly called "the pearls of the South." Together they form one of the most modern resorts of the world. There are approximately 50 large and comfortable sanatoriums and rest homes, accommodating 100,000 vacationers annually. Each rest home or sanatorium is a palace in the true sense of the word, surrounded by subtropical gardens. The Sochi Botanical Park is a must for all visitors. In the park there are trees and shrubs from every country in the world. The flowering resort city is connected by highway with other coastal cities. Modern diesel passenger ships cruise along the entire Black Sea coast, stopping at every port.

There are excellent sanatoriums at Borzhomi, Abastumani, Teberda, and Shovi. Tskhaltubo, a resort developed after the Revolution, is famous for its medicinal springs.

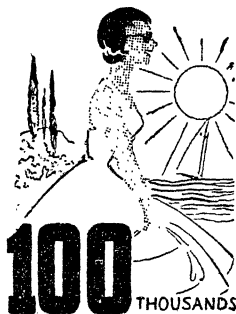
Over 100,000 working people spend their annual vacations in the Crimea.

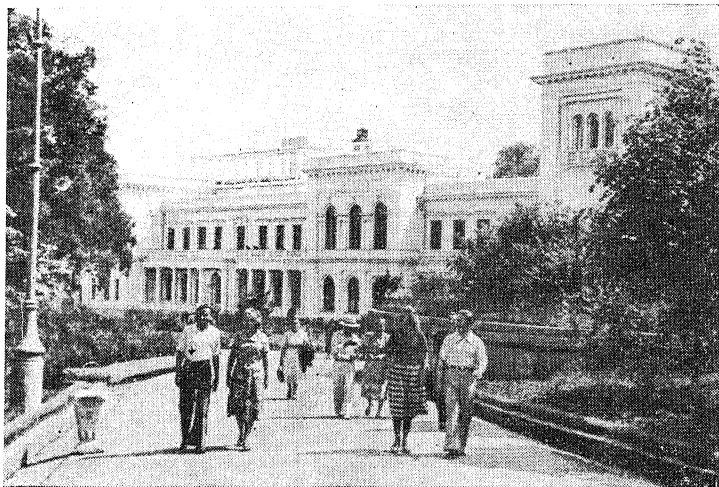
This is what Luis Ochaşayo, a Brazilian trade-union representative, said:

"We spent several days at Livadia Sanatorium and saw the palaces in which the bourgeoisie and royalty used to spend their



1958





Livadia Sanatorium, Crimea

time. They are now rest homes and sanatoriums for workers.

"Livadia Palace is no longer a fabulous palace belonging to the Russian tsarina. It was a great surprise to look into her bedroom and find there four workers of various professions who had come to the South to rest and get strong. It seems there is nothing surprising in this."

The natural conditions of the Soviet Union make it possible to build resorts in every republic, territory and region. New resorts are operating in Moscow Region and in the Urals, in Siberia and Central Asia, in the Ukraine and the Far East.

No other country in the world has so many wonderful resorts.

Over five and a half million people spend their annual vacations in the sanatoriums and rest homes of the Soviet Union. Often the worker pays only 30 per cent of his bill. The rest is paid by his trade union. There is a set number of totally free vacations. During his stay at the sanatorium, a person receives, free of charge, the course of treatment prescribed by his doctor.

However, in order to have a good vacation one need not limit himself to rest homes or sanatoriums. During the summer months comfortable steamers and diesel ships cruise down the larger rivers. Passengers aboard have a chance to spend their vacations afloat, resting and seeing the sights along the way. The boats stop off at every large city, where the passengers are met by special guides who take them sight-seeing to the more famous spots of the area.

Those who have a feeling of wanderlust and wish to spend their vacations travelling down the rivers, over the mountains and across the famous trails, may use the friendly hostels and mountaineering camps all along the way.

There are such hostels in the Caucasus and the Crimea, in the Altai and the Urals, in Siberia and in many other places throughout the country. These camps provide free use of wind jackets, ice-axes, climbing-irons, hooks, ropes, tents, rubber boats, and other necessary equipment.

The government is also greatly concerned with industrial and office workers who spend their vacations in the city. The many parks, gardens, club-rooms, stadiums, swimming and boating stations, theatres and libraries are at their disposal.

"THE PRIVILEGED CLASS"

Long before a new Soviet citizen is born his welfare becomes a matter of concern to his country. Soviet law protects the working woman, caring for her during her pregnancy.

According to these laws, pregnant women cannot be engaged in overtime work; when necessary, they are transferred to lighter jobs. It is considered a criminal offence to refuse employment to a woman who is pregnant or to lower her wages at this time. A pregnant woman receives a fully paid maternity leave of 112 days (56 days before the child is born and 56 days after) besides her annual vacation.

In over 7,000 women's consultation centres throughout the U.S.S.R. women receive a doctor's skilled advice and all necessary medical assistance; there are approximately 200,000 hospital beds in lying-in hospitals and in the maternity wards of hospitals; the above are staffed by 24,000 gynecologists and obstetricians and 165,000 midwives and assistant doctors.



No matter where a woman lives—whether in a big industrial centre or a tiny village, a mountain *aul* or a settlement beyond the Polar Circle, at the heart of the country or at its remotest outpost—she receives free medical aid at confinement and her baby is looked well after.

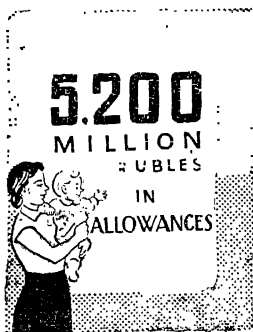
Nearly 100 per cent of all children born in cities are delivered in hospitals, and over 90 per cent of all children born in villages are delivered by trained personnel.

Cases of women dying in childbed have become extremely rare.

A short 40 years ago 95 per cent of all women in Russia gave birth without any medical assistance, while 30,000 women died in childbed annually.

Prior to the Revolution the birth of a child in a large, low-income family meant a further decrease in its standard of living. A mother of many children received no government or public aid whatsoever.

In the U.S.S.R. mothers of large families have the respect and help of the community. The government grants them definite sums for the upbringing of their children. In 1957 the government allocated 5,200 million rubles for grants to mothers of large families and unwed mothers.



"The best is for the children"—such is the law of life in a socialist society. In answer to the question: "Are there privileged classes in the U.S.S.R.?" Hewlett Johnson, Dean of Canterbury, said upon his return home from a trip to the Soviet Union:

"Yes, the children."

They became the "privileged class" from the very first days of Soviet power. The third day after the Soviet Government was formed, it created a State Committee on Education, and in December 1917 issued a decree for the protection of mothers and children. During the Civil War, when the young Soviet Republic, completely encircled by enemy blockades and foreign interventionists, was plundered and ruined, it gave its first piece of bread and its first cup of milk to children. In 1919 V. I. Lenin signed a decree creating the "Council for the Protection of Children." This decree made it obligatory for all People's Commissariats and departments to see to it that the country's children were fed, clothed and received adequate medical care. Though 1920 was a year of hunger and disruption, 18 children's sanatoriums, 40 forest schools and 16 children's colonies were opened.

In 1921 a committee headed by F. Dzerzhinsky was formed to improve child welfare. N. A. Semashko, the first People's Commissar of Public Health, was later named chairman. The committee's chief goal was to cope with the problem of the country's many homeless children.

As can be seen, during its entire history the Soviet Government has been concerned with its children's happiness, with the health and education of its future citizens. There are no children happier or wealthier than Soviet children. The government has given them palaces and parks, houses of Young Pioneers, children's technical stations, resorts and summer camps.

The 1,092 children's sanatoriums accommodate 112,000 children annually.

1,046,000 children are cared for in nurseries. Besides, three million children attend seasonal nurseries and day groups. An infant is accepted in a nursery at the age of three months. The parents pay but a nominal fee, with the government carrying the brunt of the cost.

Over two million children aged three to seven attend kindergartens.

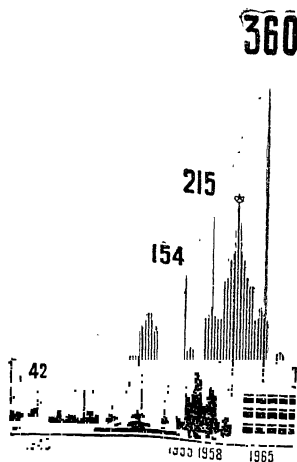
In 1958 the Soviet Government spent 10,000 million rubles on the construction and upkeep of children's pre-school institutions. The figure will rise to 103,000 million rubles in the next seven years, and by 1965 the number of children accommodated in them will double.

Every school has its doctor's office where the children receive regular check-ups and first-aid.

Over six million children spent the summer of 1958 in Young Pioneer camps, on camping trips and in the country cottages of their nurseries and kindergartens.

This constant care has borne its fruits. A country which formerly had one of the highest infant mortality rates in Europe (30 per cent of all children born in tsarist Russia died before the age of one), the Soviet Union now has the lowest infant mortality rate in the world.

**STATE EXPENDITURES ON
EDUCATION, HEALTH, PENSIONS
AND OTHER SOCIAL AND CULTURAL
REQUIREMENTS OF THE PEOPLE**
(000 million rubles)



LIFE AND LIVING CONDITIONS

ON THE ROAD TO PLENTY



A well-developed power base and a metal and machine-building industry make the country economically secure and capable of defending its independence. Moreover, new mines, oil wells, electric power stations and machinery are created to gather bumper crops, produce more foodstuffs, textiles, footwear, radio sets and various household appliances.... In a word, to produce more for the population. The socialist country's greatest concern is the well-being of its citizens.

Production of consumer goods in the U.S.S.R. is constantly increasing, due to the continual rise in the production of the means of production which ensures an increased tempo of development of every field of the national economy, and to the expansion of socialist agriculture.

By the end of the Second Five-Year Plan (1937), the production of consumer goods increased 6.5 times as compared to 1913.

In 1957 the production of consumer goods increased 13 times as compared to 1913.

The ever-expanding Soviet economy can now ensure a constant rise in the production of manufactured goods, foodstuffs and household appliances, moving yet closer to the final goal of fully satisfying the growing material and cultural needs of the Soviet people. Overall consumption of consumer goods will be increased from 60 to 63 per cent in the coming seven-year period.

The *food industry* plays a major role in fulfilling the needs of the population.

Socialism has done away with poverty and semi-starvation among the working masses once and for all. The development of a modern food industry was one of the measures taken in this respect. Naturally, during the first years of Soviet power, when the foundation was being laid for heavy industry, the food industry could satisfy only the very basic needs of the population. An abundance of food in wide va-

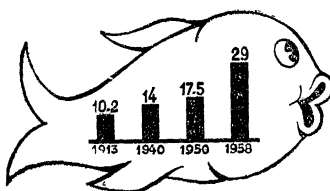
riety was then a far-off goal. The food industry began to develop rapidly in the '30s.

At present the Soviet food industry has nearly 30 different branches; its share in the gross production figures of the country is of no small importance. The industry satisfies the most varied demands of the 208 million populace.

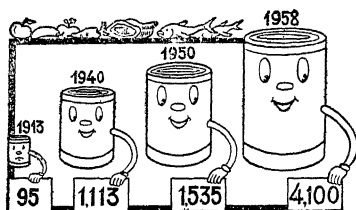
During the past 40 years the fish catch has increased more than 2.6 times. Only Japan and the U.S.A. are ahead of the U.S.S.R. in the amount of live fish caught (including whales and seals).

The canning industry is an important branch of the food industry. By 1950 the Soviet canning industry possessing up-to-date equipment was first in Europe and second in the world by volume of production. In 1957 the output of tinned vegetables at the Crimea Cannery alone exceeded that of the entire canning industry of pre-revolutionary Russia almost five-fold. Per capita output grew from 0.7 can in 1913 and 5.8 cans in 1940 to 18.9 in 1957.

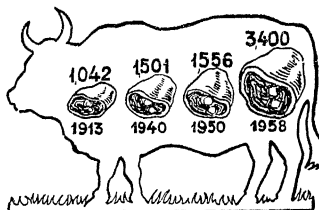
TOTAL FISH HAUL IN THE U. S. S. R.
(including whales and other sea animals, in million centners)



OUTPUT OF TINNED GOODS
(million cans)



MEAT OUTPUT
(thousand tons)



By 1935 the U.S.S.R. had taken first place in the production of beet sugar. In the next few years the Soviet Union will approach the highest production figures existing, those of the Cuban Republic (7.2 million tons in 1951-52), the world's top sugar producer, and will go on to bring sugar production up to 9-10 million tons annually.

Confectioneries, which prior to the Revolution were accessible chiefly to the privileged classes, can now be found in every home. Production in 1957 increased ten times as compared to 1913 (to 7.8 kilograms per capita).

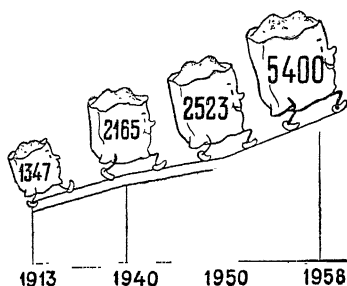
During the years of Soviet power the output of the food industry has increased nearly eight times.

However, this level is still insufficient. With each passing year the requirements of Soviet consumers become greater and greater. Life demands that the food industry step up its production, further

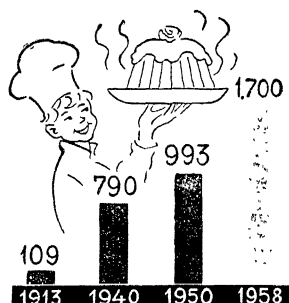
improving the quality of its goods and considerably expanding the variety.

In the next seven years the gross output of the food industry will increase approximately 1.7 times. The per capita production of a num-

OUTPUT OF GRANULATED SUGAR
(thousand tons)



OUTPUT OF CONFECTIONERY
(thousand tons)



ber of most important foodstuffs will exceed that of the more advanced capitalist countries.

The production of *consumer goods* in the U.S.S.R. has similarly risen sharply.

Prior to the Revolution millions of workers and peasants were unable to satisfy the need for shoes, clothing and yard goods for themselves and their families. This is now a thing of the past. Yet, it does no harm to recall the days when there was one pair of boots to an entire large peasant family. The merchants' shops were full of silks, woollens, laces, table-cloths, knitted goods and shoes, but they were for the rich only.

Where did all these goods come from?

Silk from Japan, woollens from England, lace from Brussels, knitted goods from Germany, linen from Holland, panama hats from Italy, stockings from France....

Russia's light industry was sorely underdeveloped. A country which had its own great resources of raw materials to serve as a basis for extensive textile and shoe industries, knitting mills and other branches of the economy, was completely dependent upon its foreign suppliers.

Tsarist Russia had only one factory producing artificial silk; only small establishments producing knitted goods; a domestic garment industry; there was no cocoon-winding industry at all (nearly 1,500 tons of dry cocoons were exported annually, while the silk-weaving factories used imported raw silk); practically all the equipment for light industry factories was imported from England, Germany and other countries; the great majority of light industry factories were concentrated in the central regions: in Moscow, Ivanovo, Yaroslavl, Tver and the adjacent districts.

Now the U.S.S.R. has thousands of factories producing consumer goods. They are everywhere: in Moscow and Leningrad, in Rostov-on-Don and Minsk, in Erevan and Omsk, in Baku and Tashkent, in Kirov and Tbilisi. Not a region or territory exists in the country where there are not dozens and even hundreds of light industry establishments.

In the post-war years, hundreds of new factories and plants have been erected and put into operation. Among them are the Kamyshin and Barnaul cotton plants, the largest in the R.S.F.S.R., and the Kherson plant in the Ukraine.

All these plants are equipped with the most modern machinery.

The production of consumer goods increases rapidly from year to year.

PRODUCTION INCREASE IN THE VARIOUS BRANCHES OF LIGHT INDUSTRY

(the 1913 level is taken as 1)

	1928	1940	1945	1957
Light industry on the whole	1.4	5.0	3.1	11
including:				
knitted goods	5.2	40	23	125
ready-made clothes	2.4	13	14	32
Production of cultural and household goods	—	4.4	0.5	40

The assortment of textiles, shoes, clothing, knitted goods and furs has improved in quality and been expanded. The production of high-quality cottons and woollens, fashionable leather shoes, furs and children's fur coats has increased considerably.

PRODUCTION OF TEXTILES AND FOOTWEAR

	1913	1917	1928	1940	1945	1958
Textiles produced (in millions of metres)	2,848	1,585	2,949	4,436	1,813	7,792
including:						
cottons	2,582	1,400	2,678	3,954	1,617	5,800
woollens	103.0	70.0	86.8	119.7	53.6	303
linens	120.0	97.0	174.0	285.5	106.5	481
silks	42.6	18.0	9.6	76.6	36.4	845
Leather shoes (in millions of pairs)	60	50	58	211	63	356

As compared to 1958, the 1965 gross output of light industry will increase approximately 1.5 times and will equal:

cottons	133-138%
woollens	165%
linens	132%
silks	176%
leather shoes	145%

The U.S.S.R.'s mighty machine-building industry served as a basis for the creation of new factories and shops whose production lightens the household burden, improves and adorns a person's life. Electrical household appliances are in constant demand.

PRODUCTION (in thousands)				
	1940	1945	1950	1958
Refrigerators . . .	3.5	0.3	1.2	360
Washing-machines	—	—	0.3	538

Radio and television sets, combination radios and phonographs, phonographs and cameras are also being produced on a mass scale.

PRODUCTION (in thousands)				
	1940	1945	1950	1958
Radio sets	160.5	13.9	1,071	3,900
Television sets	0.3	—	12	1,000

The production of watches, clocks and bicycles has increased greatly.

PRODUCTION						
	1913	1928	1940	1945	1950	1958
Watches and clocks of all types (in millions) . .	0.7	0.9	2.8	0.3	7.6	25.0
Bicycles (in thousands)	4.9	10.8	255.0	23.8	649.3	3,700

The pages of pre-revolutionary magazines carried hundreds of ads for Swiss watches, German sewing-machines and other foreign products. The Soviet Union is now an important exporter of light industry goods on the world market. Soviet watches and clocks are successfully competing with the famous Swiss watches; Soviet radio and television sets and other electrical appliances are also in great demand. Buyers are attracted by the high quality and accessible prices of these goods.

The production of household appliances will be doubled and will reach 88,000 million rubles by 1965.

DEVELOPMENT OF SOVIET TRADE

It is not enough to produce large quantities of various products, it is just as necessary to see to it that they reach the consumer in good time and completely satisfy the material and cultural demands of the Soviet buyer. This problem is well in hand. The sharp increase in commodity turnover is indicative of the fact that Soviet people have begun to eat better, dress better and live better.

In 1957 the retail commodity turnover of state and co-operative trade, including public catering establishments, has increased (in comparable prices) nearly 2.6 times as compared to 1940.

The increase in commodity turnover has brought about a change in its structure. The people of tsarist Russia were chiefly concerned with their "daily bread," with little remaining for clothes and other manufactured goods. Only the barest necessities were purchased. In the Soviet Union there is a systematic rise in the sales of the more nutritious foods and the more costly and varied manufactured goods. From 1940 to 1956 the proportion of manufactured goods rose from 36.9 to 44.8 per cent. The people are buying more and more of the goods that were unaccessible to the working masses of tsarist Russia.

The demand of the rural population for consumer goods is closely approaching the demand of city dwellers. Such items as silk dresses, woollen suits and coats, electrical appliances, bicycles, radio and television sets, etc., construction materials and industrial goods are in constant demand in the collective farms.

In 1957 there were 503,000 stores and shops in the country, including over 200,000 in the villages, in the system of Central Union of Consumers' Societies. Ninety-three per cent of all retail trade falls to government and co-operative stores and 7 per cent to collective-farm stores.

The national republics in particular have expanded their network of stores. In 1956 the number of retail government and co-operative stores in the U.S.S.R. increased by 215 per cent as compared to 1928, while the corresponding increase in the republics of Central Asia and Kazakhstan was as follows:

Uzbek S.S.R.	398%	Tajik S.S.R.	29 times
Kazakh S.S.R.	765%	Turkmen S.S.R. . . .	304%
Kirghiz S.S.R.	820%		

In order to better satisfy the demand for consumer and other goods, a great number of specialized shops are opened.

In the post-war years the State Department Store (GUM) in Moscow with a staff of 1,406 has been completely remodelled; the new "Children's World" Department Store has a staff of 839. Large department stores have been built in Minsk, Kiev, Gorky, Krasnodar, Rostov-on-Don, Voronezh and Ashkhabad. The large Gostiny Dvor, built over 180 years ago in Leningrad, is being remodelled. Large department stores are going up in Stalinabad, Alma-Ata, and other cities.

Modern forms of retail trade are being introduced. In large cities and industrial centres food bought in the stores is delivered to the home. There is a great future in automatic vending machines.

Soviet trading organizations bring pressure to bear upon light industry, demanding higher quality, a better and wider assortment of goods.

A TIME-SAVER AND AID

Public catering, which has become so widespread during the past 40 years, is not only a great time-saver, but—

replaces the unproductive labour of the housewife by means of more productive collective labour;

freees millions of women burdened by housework for socialist production and community affairs;

makes it possible to use existing food resources correctly and economically, to organize public catering on a scientific basis.

There were no real public catering establishments in tsarist Russia. A working man had access to the taverns, eating-houses and cook-shops. These unsanitary, huckstering establishments were a constant source of gastric diseases. The extremely low standard of living of the working classes determined their demand for food, which, as a rule, was satisfied by these primitive "establishments."

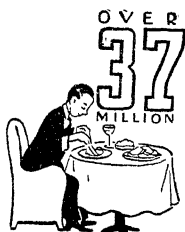
The following table shows the rise in the various types of public catering establishments in the Soviet Union (in thousands):

	1928	1940	1950	1957
Total	14.6	87.6	95.4	128.7
including:				
in cities and towns	9.8	59.2	69.8	93.0
in villages	4.8	28.4	25.6	35.7

By 1958 the number of dining-rooms, restaurants and tea-rooms exceeded 56,000, while the number of snack bars and lunch counters exceeded 71,000.

Villages which, in the past, had only small taverns, now have dining-rooms, restaurants and tea-rooms.

New forms of service have been introduced. In over 80 per cent of the dining-rooms, tea-rooms and lunch counters self-service has made it possible to double the number of people served, to lower the cost and increase the output.



In many factories hot lunches and snacks are delivered right to the shops. In 1956 there were 5,400 food delivery stations servicing railway workers (as compared to 2,758 in 1950). Hot food is delivered to switch-operators, dispatchers, workers engaged in hump-yards and elsewhere.

There are over 3,000 self-service lunch counters and many cafeterias without cashiers. Vending machines sell soft drinks, snacks, and confectioneries. There are automatic snack bars and cafés in Moscow, Leningrad, Kiev, Stalino and Baku.

Restaurants, dining-rooms and other public catering establishments have take-home departments that sell nearly a million dinners at cut-rate prices daily. Home kitchens located in the larger housing projects of the major cities also have take-home dinner services. Orders for these dinners are also accepted by phone. At the customer's request, his dinner is delivered to his home. These establishments are extremely popular.

In the larger cities over 1,000 stores sell foods and ready-to-cook meats, fish, vegetables and other products prepared in dining-rooms and restaurants. From 1959 to 1961 the dining-rooms, restaurants, tea-rooms, cafés and snack bars will transfer to using ready-to-cook foods prepared in the larger dining-rooms or shops of special kitchen factories. This will not only improve the quality of the food, but will bring about a rise in efficiency in the numerous cafés, restaurants and dining-rooms, doing away with the "dirty work" of cleaning vegetables, trimming meats, etc.

Public catering establishments serve over 35 million dishes daily.

The work of these establishments and of the country's stores is under constant public supervision. The workers themselves, the customers in stores and dining-rooms, take an active part in the drive for better service and organization, for better quality and cheaper foods.

Over 500,000 public controllers, recommended by their trade unions, are on the job. There are 15,000 control committees of nearly 45,000 working in the village dining-rooms and tea-rooms.

These public controllers are endowed with considerable rights: they reprimand when necessary and suggest new methods of work, they call the public's attention to every case of law-evasion and bring it to the attention of the trade organizations and the State Trading Inspection. The work of dining-rooms located in factories, plants, office buildings and on state farms is discussed at workers' meetings, where the managers of the public catering establishments report to their customers.

Despite the gains achieved, this field still lags behind the growing demands of the population. In February 1959, the Central Committee of the Communist Party and the Council of Ministers of the U.S.S.R. adopted a resolution entitled "On the Further Development and Improvement of Public Catering." It made it obligatory for the Party Central Committees of the Union republics and their Councils of Ministers to more than double the output of public catering establishments in the next seven years. At the same time, the State Planning Committee is developing concrete suggestions for a drop in prices, beginning with 1961, and scheduled to affect all catering establishments.

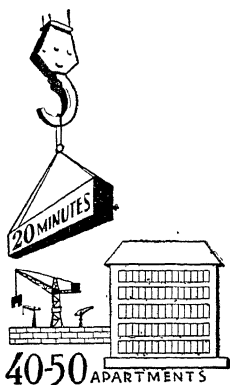
INTO NEW APARTMENTS

Every single day over 20,000 people move into new apartments in the cities and workers' settlements of the Soviet Union.

The construction industry produces an average of 80 sq. m. of living space a minute; this is equal to a 40-50 apartment five-storey house every 20 minutes.

Every day an average of two new five-storey houses of 100 apartments each are put into operation in Moscow. Enough housing is built





in the U.S.S.R. during a single year to create 40 new cities of 100,000 people each.

Scaffolding and building cranes have become an inseparable part of the city scene. The face of our cities is changing from day to day: where yesterday there were empty lots and old wooden houses, whole blocks of modern apartment buildings are going up in record time. Soviet people know that one of the country's most pressing problems, that of housing, will be solved within the next decade.

The Soviet Government has had to exert much energy and spend great sums in order to overcome the backwardness it inherited from tsarist Russia, one of the last on the list of European countries in the average per capita living accommodations.

Old Russia presented a picture of chaotic, unplanned cities and villages with small wooden and mud houses. In 1910 the number of one-storey buildings in Moscow stood at 91.2 per cent, while in other Russian cities the corresponding figure was 99 per cent.

Most workers' families lived in attics, dark, damp basements, cubby-holes and mud huts, or rented cots in barracks and lodging-houses.

In the nineties approximately 17 per cent of all St. Petersburg workers lived in basements. In 1908 nearly 70 per cent of all single workers in St. Petersburg rented half a cot (i. e., one cot for two men working in different shifts), while nearly 43 per cent of all workers' families had but a single cot or a corner of a room. In 1912 there were 325,000 people living in such "apartments" in Moscow; 125,000 lived in cellars and nearly 400,000 in unbelievably cramped corners. The oil workers of Baku and nearly half the miners of Donbas lived in mud huts without floors or windows. At the factories and plants 100 people usually shared the most unsanitary common sleeping-rooms of double-decker plank beds (with two persons for every place), while two to three families would share a single small room.

The Soviet Government effected the mass-scale removal of workers and their families from basements and slums to apartments which formerly belonged to the rich. The next step was the planned construction of hundreds upon hundreds of new houses in all the major industrial centres, where the housing shortage was most acute.

During the years of Soviet power over 500 million sq. m. of living space has been built and renovated by state and co-operative organizations (not including the collective farms) and by the urban population at their own expense and with the aid of government loans.

A large building programme is now under way in the rural areas. From 1946 to 1957 collective farmers and the village intelligentsia built 6.4 million houses.

In 1957 in the cities and workers' settlements 48.4 million sq. m. of living space was handed over to the population. This is considerably more than was built during the First or Second Five-Year Plans and greatly exceeds the total housing fund of such cities as Kiev, Baku, Kharkov, Gorky, Sverdlovsk and Chelyabinsk all told.

The tempo and scale of housing construction in the U.S.S.R. places it among the leading countries of the world.

In 1957, the following number of apartments were built for every 1,000 people:

in the U.S.S.R.	10.6 apartments
in the U.S.A.	6.7 "
in Great Britain	5.9 "
in France	6.2 "

The present housing fund of the cities and workers' settlements of the Soviet Union is nearly four times the pre-revolutionary (1913) level and over 1.5 times the pre-war (1940) level. Nevertheless, the housing shortage remains acute.

Housing construction could not keep up with the unprecedented pace of industrial construction and the rapidly increasing city population (28.1 million in 1913, 87 million in 1956).

The wars took a terrible toll of housing. During the First World War and the Civil War 361,000 buildings in towns and cities, including 14 per cent of all existing housing, were destroyed or rendered useless; during the Second World War the Nazis completely or partially destroyed nearly 70 million sq. m. of living space, leaving 25 million people homeless.

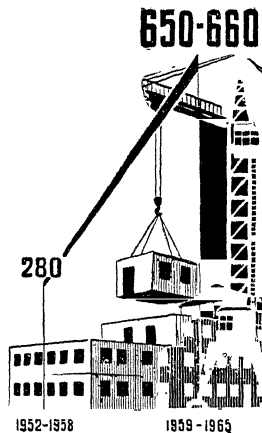
This was disastrous as far as solving the housing problem was concerned. The Communist Party and the Soviet Government have set as one of their chief aims the increase of housing construction, calling the public's attention to the shortcomings existing in the construction industry in order to overcome them through common effort.

A new programme of housing construction has been developed whereby the next 10 to 12 years will see a definite end to the housing shortage.

In 1958 nearly 68 million sq. m. of living space were completed (not including houses put up by collective farmers and the village intelligentsia who have built a total of 800,000 houses).

From 1959 to 1965 the state's capital investments, the personal savings of the population, and this latter supplemented by government credits, will account for the building of a total of 650-660 mil-

**HOUSING CONSTRUCTION IN
TOWNS AND INDUSTRIAL
SETTLEMENTS**
(million sq. m.)





Cheryomushki housing

lion sq. m. of living space or nearly 15 million apartments in the cities and workers' settlements, on the state farms, repair and maintenance stations, and lumber camps; this is 2.3 times more than the corresponding figure for the previous seven years. During the same period the rural population will build nearly seven million homes.

Workers, engineers and professional workers of the various factories and offices, aided by the government and their trade unions, donate their own labour to speed up the construction of houses allocated to them. The trade unions, the administration of the various plants and the workers themselves all pool forces. Industrial and office workers temporarily become bricklayers, plasterers and carpenters. The materials and means are found at the site of construction.

Housing projects constructed by the workers themselves are financed: by special capital investment allocations; by plant funds and the directors' fund; by various bonuses granted by the plants and organizations.

There are endless possibilities for making use of local building materials. Workers of the Gorky Auto Works set up a shop which turns out 100,000 slag stones monthly. Workers of the Sormovo Silicate Plant have organized the production of large slag-silicate wall panels,



estate, Moscow

while workers of the chemical plant produce linoleum from waste materials.

In 1956 workers of the Gorky Auto Works built 15 houses in their spare time. The people of Gorky decided to increase their tempo of work and completely solve the city's housing problem in the next seven to eight years. Workers of Leningrad, Stalingrad, Kharkov, Voronezh, Lvov and many other cities are following their example.

The government offers great aid to individual builders. The economic councils, ministries, factories and offices supply them with building materials, floor plans and transportation. Workers co-operating in the building of apartment houses also receive government grants.

To build quickly, cheaply and well. This was the chief topic on the agenda of the Third All-Union Conference of Builders, held in April 1958. In order to cope with these problems, Soviet builders are introducing industrial methods and new building materials in housing construction. A short three years ago a decision was taken on the establishment of hundreds of factories and construction yards for the production of pre-fabricated concrete structures and details; they are now in common use in most cities. The building site is ever more often becoming an assembly grounds, for entire parts of the future

house—the walls, ceilings, partitions, stairs, etc.—are delivered straight from the factory. Construction assembly men have only to assemble the building from these parts, just as airplanes and automobiles are assembled. These large pre-fabricated structures and details *speed up* construction, are less labour consuming and considerably *cheaper*; work goes on at a constant tempo the year round. It takes 0.7-0.9 of a man-day to construct one cubic metre of a large-block house and 0.35 of a man-day, for a large-panel house, i. e., nearly three times less than for an ordinary brick building. In Leningrad it takes 4 months to build a large-panel 5-storey house. The construction of light houses from such building materials as concrete panels made by a vibrating-rolling method is now under way.

A great production basis is being created for pre-fabricated houses. The five million-strong army of construction workers is armed with: 20,800 excavators, 9,750 scrapers, 20,588 bulldozers, 33,000 tower cranes.

The U.S.S.R. now takes first place in the world's production of pre-fabricated concrete. The 1958 output was 18 million cubic metres.

The mass production of light materials for large-panel buildings has been increased. Low-storey housing projects are also being industrialized. In 1961 twenty million square metres of standard homes will be built and 90 per cent of them will be sold to individual buyers.

The *quality* of housing construction is constantly *improving*. Most houses and all schools are built according to standard plans, which afford a maximum of comfort while considerably *lowering construction costs*.

All apartments built since 1958 are one-family modern, low-cost units.

Four- to five-storey houses will predominate in large cities; they do not call for lifts or other special equipment. In towns and workers' settlements, the houses will be two to three storeys high.

Figures show that in building according to the new low-cost projects, rooms 2.5 metres high in four- to five-storey houses can provide a 10 to 12 per cent saving on every square metre of living space.

Many cities, towns and workers' settlements are building new blocks and streets according to a general plan. This complex construction makes it possible to use industrial methods on a wide scale, to create pleasant architectural ensembles. In planning new homes and streets, the architects' chief aim is to provide the future tenants with as much light, air and comfort as possible. The surrounding area is landscaped and includes ponds, squares and playgrounds. All public service facilities are located at a distance, to improve the sanitary conditions of the yards and decrease street noises in the vicinity.

The U.S.S.R. has the lowest rents in the world.

Soviet citizens do not know what it means to carry a heavy rent burden, as rents do not exceed five or six per cent of a person's pay. Families of four to six members are granted rent discounts of five to fifteen per cent. Workers pay approximately one-tenth to one-quarter of the actual cost of their rents, while the government shoulders the rest.

In pre-revolutionary Russia workers paid more than 20 per cent of their earnings for rent. In capitalist countries rents account for 20 to 30 per cent of a person's pay.

The Culture of the New World

"November 5 ... Petropavlovsk-Kamchatsky—6:14 a.m., Tripoli—7:38 a.m., Bucharest—7:42 a.m., Moscow—7:45 a.m. ..." Round the world in one and a half hours! What sort of strange time-table is this?...

It is the flight schedule of the Soviet Union's second Sputnik.

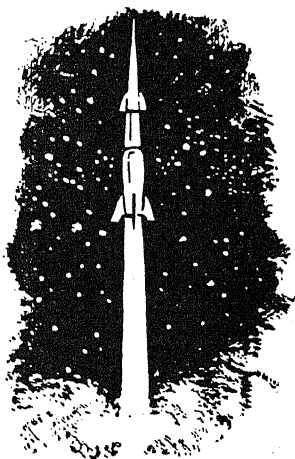
Following are two excerpts from the newspapers of the time:

"The TASS dispatch may signify the end of one era and the beginning of another."

(*Tempo*, Italy)

"This is man's great victory. It will be a turning point in the history of civilization, for now man is no longer tied to his planet."

(Frederic Joliot-Curie)



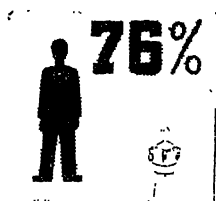
What has occurred to make a country that was, but a few years ago, one of the most backward in the world come to the fore in the field of scientific progress?

There is only one answer to this question: the social changes in the U.S.S.R. The building of socialism created unprecedented conditions for the development of science, industry and culture. There has been a cultural revolution in the U.S.S.R.

Soviet culture, developing to its full capacity, encompassed the broad working masses, making them the creators of new cultural treasures, it discovered new chapters in human learning,

and enriched world culture by new discoveries, research and works of art.

OVER 50 MILLION STUDENTS



A quarter of the population of the U.S.S.R. is studying. There are students nearly in every family. In one family it will be a seven-year-old child, crossing the threshold of his school for the first time; in another, it will be a youth or a girl studying for their 10-year school final examinations or graduating from college; in a third, the parents themselves attend evening schools or take correspondence courses. The unparalleled scope of

public education is one of the major victories of the Soviet system.

Prior to the Revolution 76 per cent of the adult population of the country was illiterate.

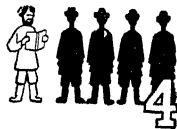
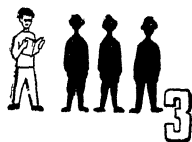
"There was not another country in the whole of Europe in which the masses were so completely *robbed* of education, enlightenment and knowledge as was the case in Russia" was how Lenin characterized the state of public education in pre-revolutionary times.

There were the following number of illiterates to every literate person in tsarist Russia:

on the average

among the peasantry

among women



When the Soviet state undertook a cultural revolution, it had to begin from the very bottom by overcoming illiteracy. People had to be taught to read and write in order to become politically conscious fighters for a new society, to become active participants in socialist construction and in the management of their country.

In 1919 the Council of People's Commissars of the R.S.F.S.R. passed the following resolution: "The entire illiterate population in the 8 to 50 age group is obliged to learn to read and write in their native or Russian language, according to choice."

In 1920 the All-Russian Extraordinary Committee on Liquidating Illiteracy was formed, with branches in every locality. It was then that the "Down with Illiteracy" society was inaugurated.

Illiteracy centres were opened in factories, schools, club-rooms, and in house-managers' offices with an enrolment of hundreds of thousands. It was truly an unprecedented march towards knowledge. In the course of fifteen years (1920-35) nearly 50 million people learned to read and write. By 1939 the literacy figure for Soviet citizens of 9 years and up was 91 per cent. Illiteracy had been liquidated as a national problem.

UNIVERSAL, COMPULSORY....

At the same time, a new school system was being evolved. This is how the 8th Congress of the Russian Communist Party formulated its aims in 1919:

"To introduce a free and compulsory general and polytechnical (acquainting the pupil in theory and practice with all the major branches of production) education for all children of both sexes up to the age of 17.

"Full realization of the principles of the uniform labour school, where classes are conducted in the child's native tongue, with a co-educational system that is definitely secular, i. e., that is free from all religious influences, that promotes close contact between class-room studies and socially productive work, that prepares well-educated members of a communist society."

Basic Stages in the Development of School Education in the U.S.S.R.

1919—"Regulations of the Uniform Labour School" introduced *free universal* education.

1930-35—in accordance with the decisions of the 16th Congress of the Communist Party, *compulsory primary school education for rural districts and 7-year school education for towns and cities* was introduced throughout the country.

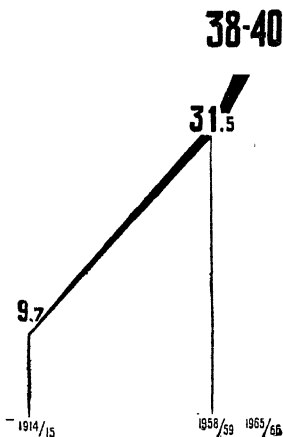
1950-55—universal 10-year school education was introduced in the capitals of the Union republics and in all major cities.

There are nearly 29 million school children in the Soviet Union. It takes an army of teachers to educate them. Teachers are trained in pedagogical schools, institutes and universities which exist in every region, republic, national area and in most district centres. Tens of thousands of secondary-school teachers are graduated annually. The number of teachers in the country has increased from 280,000 in 1914 to nearly two million in 1958.

There are 9 teachers to every 1,000 persons in the U.S.S.R., 5.8 in Great Britain and 5.4 in Italy. This means 17 pupils to every teacher in the U.S.S.R., 82 in the U.S.A. and 30 in Great Britain.

The scope of public education is most apparent in the case of the rural areas: 56 per cent of all 10-year schools are now located in these

**ENROLMENT IN GENERAL
SCHOOLS**
(million persons)



areas. More than half the country's school children study in village schools.

The following changes have taken place in the school system of the Novo-Annensky District, Stalingrad Region:

1913—there were 12 primary (two- or four-year) schools, 1,000 pupils, and 35 teachers, of whom 15 were clergymen.

1918—One secondary and 16 primary schools were opened.

1940—Compulsory primary education introduced throughout the district.

1950—All children in the 7 to 14 age group attended compulsory seven-year schools.

1957—There were now 40 schools in the district (including six secondary schools, three boarding-schools, and eleven seven-year schools) and an agricultural school with an enrolment of 350; in all, there were 4,630 pupils and 316 teachers, of whom 208 were college graduates.

The changes that have taken place are still more apparent in the Union republics. In tsarist Russia classes were conducted chiefly in Russian; at present they are conducted in 66 languages.



24

Prior to the Revolution there were 24 illiterates to every literate Tajik and 99 illiterates to every literate Turkmen and Yakut.



99

There were approximately 17,000 school children on the territory of the present Uzbek Republic. Now there are over 1.3 million children studying in the schools of the Uzbek S.S.R.

The school "system" of pre-revolutionary Tajikistan included ten so-called "Russian-Native" primary schools, attended by the children of Russian administrative officials and the local rich. There are now 2,547 schools in the Tajik S.S.R., with an enrolment of over 330,000. Sixty per cent of the schools teach all subjects in the Tajik language.

Let us compare this with the educational system in Tajikistan's next door neighbour, Iran.

	For every 1,000 persons there are		per cent of literacy
	schools	pupils	
Tajik S.S.R.	1.4	179	nearly 100
Iran.	0.3	39	10

The school programme in the U.S.S.R. is so planned as to give the pupil a systematic and fundamental knowledge of the main branches of science, culture, history and engineering. Graduates of Soviet schools are, as a rule, people with a broad scope of knowledge. The chief subjects studied in secondary schools are: mathematics, physics, chemistry, biology, geography, history, literature, a foreign language and the child's native language.

Much attention is paid to a *polytechnical* system of education, whereby the children learn about the major branches of the economy, work in industry, and receive practical training and often definite industrial skills.

In Moscow schools alone there are 1,500 electrical, carpentry, and machine shops. In 1957 35,000 senior pupils received practical training in the various factories and plants.

From 1955 to 1957, 287 pupils of School No. 6 in Yalta acquired the skills of lathe operator, fitter, electrician, cabinet-maker, telegraphist, radioman, compressor operator and gardener.

In 1957, 50 secondary schools of the R.S.F.S.R. were put on an experimental programme which extended the school curriculum from one to two years. The children receive a full secondary education as well as theoretical and practical knowledge in any trade they choose. Three days out of six they work at the various factories as apprentices, acquiring industrial skills. During the winter senior pupils in village schools spend from one to two days during the school week studying agricultural production. During the autumn, spring and summer they spend much time on the farms and in the fields, *becoming qualified agricultural workers*. The number of such schools will increase with each successive year. Schools of the new type are being organized in five autonomous republics and in 32 territories and regions of the R.S.F.S.R. as well as in Moscow and Leningrad. Thus, during the 1958/59 school year 150 city and rural schools of the R.S.F.S.R. joined the new programme, bringing the number of experimental schools to 200.

However, these are but the first steps on the road towards strengthening the school's ties with everyday life. The next step will be a reorganization of the system of secondary education, making it possible to really prepare the younger generation for useful labour and active participation in the building of a communist society.

This was the essence of N. S. Khrushchov's suggestions, approved by the Presidium of the Central Committee of the Communist Party of the Soviet Union, for introducing a two-stage secondary school. The first stage would be a compulsory eight-year school. The second stage would be a specialized professional factory-type or agricultural school, or actual work in factories and plants combined with study. In December 1958 the Supreme Soviet of the U.S.S.R. adopted a law entitled "On Establishing a Closer Link Between Schools and Life and on the Further Development of Public Education."

The reform of the school system is in complete agreement with the Marxist-Leninist teaching on education and upbringing. It opens

the door for making the schools truly polytechnical in nature, for educating young people in a truly communist spirit. One cannot imagine a society of the future without a combination of study and useful work among the younger generation. Neither studies and an education devoid of useful work, nor useful work devoid of a formal education can satisfy the needs of contemporary science and industry.

BOARDING-SCHOOLS

Boarding-schools were first introduced in the U.S.S.R. in 1956 as an experiment in a new type of secondary school. By the end of 1958 there were over 500 such schools, with an enrolment of 180,000.

In organizing these schools, the government takes upon itself the education and care of the child helping its family in no small way. Children living and studying at boarding-schools have every opportunity to develop physically and mentally. They have light, airy class-rooms, fine dormitories, modern dining-halls and well-equipped rooms for extra-curricular activities.

The advantages of a boarding-school as compared to a regular school is in the possibilities it offers for presenting a rational schedule for a well-planned day of studies, work and rest. Children attending boarding-schools receive a many-sided polytechnical education. In physics, chemistry, mathematics, geography, natural science and mechanical drawing classes they acquire a solid foundation of the basic knowledge needed in each field of industry and agriculture; while working in the school shops and laboratories and training at the factory shops and in collective- and state-farm fields, they learn to apply theory to practice.

One of the aims of the boarding-schools is to instil in the children a deep-founded respect for work. The schools are built largely on a self-service basis. In their free time the children take part in various sports events, they belong to many circles such as "Nimble Fingers," the camera, drawing, modelling, music and dramatics.

Children are enrolled in boarding-school at the request of their parents. There is a definite tuition scale: children from low-income or large families are accepted completely free of charge; middle-income families pay part of the expenses for their child's education and care; parents in high-income families pay the full tuition fee. However, the average fee paid by parents is approximately 10 per cent of the sum contributed by the state.

Boarding-schools are the first shoots of the new system of public education and an example of bringing up children under modern conditions. By 1965 they will be catering for 2,500,000 pupils, that is, 14 times as many as in 1959. In the future, all parents will be enabled to have their children brought up in boarding-schools if they so desire.

ONE CAN STUDY WHILE WORKING

There is yet another type of general school. The people who attend it are of all ages and professions who for various reasons have been unable to receive a secondary education. They continue their studies while working by attending evening schools for young workers and peasants or through correspondence courses.

These evening schools were established in 1943 for young people who left school to work, taking the place of those who had gone off to the war. In time, the schools were reorganized into evening schools of working and rural youth. Anyone who wishes to continue his education is enrolled.

Nearly two million workers, collective farmers and office workers attend evening schools and study through correspondence courses.

It takes a great amount of will-power and a strong desire to study to finish a day's work and then set off for school, to come home at night, do home-work and prepare for examinations. The government does everything in its power to help these student-workers. Young people under 18 have a shortened working day. Those who study are transferred to day shifts in order that they be free to attend classes at night. Their superiors at work are obliged to let them take their annual vacations during examination time if they so desire. When a worker is preparing for the 7- or 10-year examinations, he receives an additional paid vacation.

The great majority of student-workers successfully graduate from school. From 1946 to 1956 1.7 million workers and farmers graduated from 7-year school, while one million graduated from 10-year school.

THE COUNTRY TRAINS SPECIALISTS

The working people of the U.S.S.R. can aspire to more than a secondary school education. Immediately after the October Revolution the country began training its first worker and peasant specialists, setting up secondary schools, colleges and universities.

Rabfaks were opened in 1919. These were schools attached to factories and colleges. There, workers and peasants attended 3- or 4-year rapid advance courses which prepared them for college. The Communist Party, the trade unions and the Young Communist League carried on a widespread campaign to mobilize thousands of workers for study. In a short period of time they became the well-trained leaders of Soviet economy and were to be known hereafter as "Party thousand men."

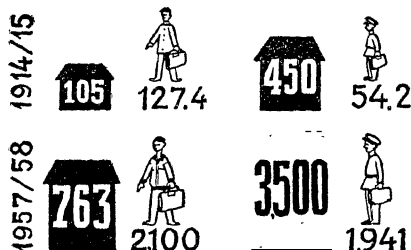
The U.S.S.R. now takes first place in the world in training young specialists.

There are more students in the U.S.S.R. than in all of Western Europe.

In 1957 over 260,000 young specialists (of whom more than 80,000 were engineers) graduated from Soviet universities and colleges. In training engineers the U.S.S.R. has surpassed the U.S.A., the most developed capitalist country. Industrial colleges of the U.S.S.R. gradu-

NUMBER OF COLLEGES AND TECHNICAL SCHOOLS AND NUMBER OF STUDENTS ENROLLED

Colleges		Technical Schools	
Number	Number of students (in thousands)	Number	Number of students (in thousands)



ate nearly three times more engineers annually than do similar colleges in the U.S.A.

In 1914 only 21 Russian cities could boast of having their own college or university. The figure now stands at 219.

Prior to the Revolution there were only four colleges on the entire territory of Siberia, the Far East and Central Asia. There was not a single such establishment on the territory of 10 Soviet republics. Now each republic has a wide network of institutes of higher education. The following table was compiled during the 1957/58 school year:

	Number of colleges	Number of students (in thousands)		Number of colleges	Number of students (in thousands)
Byelorussia . .	24	55	Moldavia . .	8	17
Uzbekistan . .	31	78	Kirghizia . .	9	15
Kazakhstan . .	27	59	Tajikistan . .	7	17
Azerbaijan . .	15	34	Armenia . .	11	20
Lithuania . . .	12	25	Turkmenia .	6	14

Before the Revolution the people of Kirghizia had no written language. Now the Kirghiz S.S.R. has its own university, a woman's pedagogical institute, five teachers' colleges and 30 technical schools.

Of the 15 universities in tsarist Russia, 14 were located in the European part of the country. Today there are 39 universities in the U.S.S.R. with an enrolment of over 200,000; there are 18 universities in the R.S.F.S.R., 7 in the Ukraine and 14 in the other national republics. As a rule, each university has from 4 to 6 faculties (a department of physics and mathematics, chemistry, biology and soil-science, geology and geography, history and philology), with an average enrolment of 2,000 to 5,000 students. In the universities of the national republics, subjects are taught in the native language and in Russian.

THE LARGEST UNIVERSITIES IN THE SOVIET UNION

Moscow State University has an enrolment of close to 15,000 in its day school. The university has 12 faculties and 2,450 teachers.

Leningrad University has an enrolment of 9,400.

Kiev University has an enrolment of 5,600.

All students at Soviet colleges and technical schools are the children of workers, peasants and the working intelligentsia.

Only two per cent of all university students in France come from working homes, while the corresponding figure for Cambridge University is 8.8 per cent.

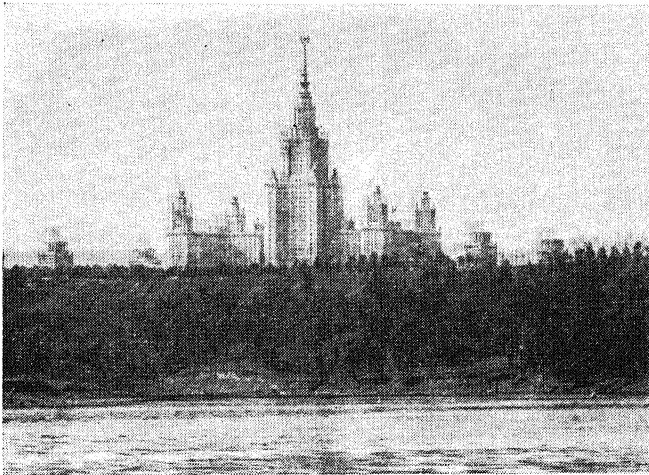
THE SOCIAL COMPOSITION OF UNIVERSITY STUDENTS IN RUSSIA IN 1913

Children of:

Nobility and officials	38.3%
Clergymen	7.4%
Honorary citizens and merchants	11.4%
Peasants (chiefly the rural bourgeoisie)	14.0%
Lower middle classes	24.4%
Others	4.5%

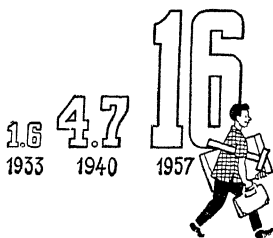
Secondary and higher education in the U.S.S.R. is free of charge.

The majority of students (nearly 80 per cent) receive government stipends.



Moscow University

**BUDGET EXPENDITURE ON
HIGHER AND SECONDARY
OCCUPATIONAL SCHOOLS**
(000 million rubles)



Besides, most students receive a salary while doing field-work.

Over fifty per cent of all students live in dormitories.

Every opportunity exists for receiving a higher education while working. There are 24 correspondence and 9 evening colleges, over 430 correspondence and 240 evening departments (faculties) in day colleges, over 300 annexes and consultation centres affiliated with the correspondence colleges.

There are five pedagogical, three polytechnical, a machine-building, power, printing and publishing, food industry, fishing industry, textile and light

industry, Soviet trade, civil engineering, automobile highroad, agricultural, forestry, economics, financial, law, railway engineering, and communications correspondence colleges in the U.S.S.R.

Over 900,000 students, representing 43 per cent of all students enrolled in the colleges and universities of the U.S.S.R., study after working hours. In 1957 nearly 80,000 of these students received their diplomas.

Students of correspondence and evening colleges are given all possible aid in their studies. They are granted a ten-day vacation in order to prepare for the entrance examinations; they receive an additional paid annual vacation while taking their regular examinations, a four-month paid vacation while writing their diploma work, and a month's paid vacation while taking their final exams. Out-of-town students are provided with dormitory accommodations while doing their laboratory work, taking their examinations and working on their diploma projects.

The All-Union Correspondence Polytechnical Institute is the largest of its kind in the country. It has an enrolment of over 32,000, and trains students in 62 fields. The college has 32 consultation centres, located throughout the Soviet Union, including many in large industrial plants. 25,000 students attend these consultation centres.

In 1957, 1,350 engineers graduated from the institute; 90 per cent received good and excellent marks for their diploma projects.

The great majority of students who become qualified engineers enter the institute as skilled workers, fitters, lathe operators, electricians and mechanics. Among the class of 1957 there were 10 directors and managers of factories, 45 shop managers and assistant shop managers, 105 chief and senior engineers.

Of the institute's 520 teachers, 23 are professors and doctors of science, 154 are docents and candidates of science. Besides, there is a staff of over 1,000 teachers who work on an hourly basis.

The growing role of the evening and correspondence colleges in training specialists strengthens the existing bonds between these institutes of higher education and industry, considerably improves

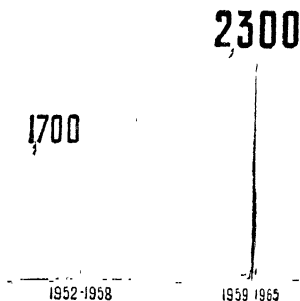
the practical and theoretic knowledge of the specialists, and helps to bring them up as active builders of a communist society.

The Control Figures for 1959-65 provide for important measures to promote public education, science and culture.

The coming seven years will bring about a considerable increase in the network of secondary schools. By 1965 the number of school children in primary and secondary schools will reach the 40 million figure, with the corresponding figure for boarding-schools no less than 2.5 million.

During the same period 2.3 million specialists will be graduated from the country's colleges and universities. Over 4 million students, including those who continue to hold down full-time jobs, will be studying in special secondary schools.

**GRADUATION OF SPECIALISTS
WITH A HIGHER EDUCATION**
(thousand persons)



THEY ARE SOLVING NATURE'S MYSTERIES

ALL CONDITIONS EXIST FOR SCIENTIFIC PROGRESS

In tsarist Russia science was very much on its own and in many cases could only rely on hand-outs from philanthropic organizations. If Russia has given the world a number of wonderful scientific discoveries, it is due only to the amazing courage of her scientists who, far from receiving aid from their government, were usually up against the indifference, stupidity, and hostility of the tsar's officials. They suffered privations and were often persecuted by the obscurantist clericals and the reactionary ruling classes.

"Only socialism can free science of its bourgeois fetters, of its subservience to capital, of its enslavement by the interests of filthy capitalist greed," wrote V. I. Lenin.

The socialist state immediately took up the problem of creating conditions favourable to the further development of science.

In 1918, a year of famine in Russia, at the behest of V. I. Lenin, Maxim Gorky compiled a list of the country's outstanding scientists and cultural leaders. They were given increased rations, as this was all the young republic could do for them at the time. Yet, its scientists were the ones on its emergency list.

Their ranks were soon flooded by talented youth from all strata of the working population, they were given institutes and laboratories, experimental plants equipped with everything necessary for scientific research. Finally, and most important, for the first time in history, science was *organized* and began developing according to a general plan, taking into account the most urgent needs of the national economy as well as the theoretical needs of science itself.

At present the Soviet Union has a many-thousand army of scientists, specialists in every branch of science. The Academy of Sciences of the U.S.S.R., the largest scientific body in the country and in the world, co-ordinates the work of this army.

The Academy of Sciences of the U.S.S.R. has eight departments: physics and mathematics, chemistry, biology, geology and geography, technical sciences, history, economics, philosophy and law, literature and languages.

In 1957 the Siberian branch of the Academy of Sciences of the U.S.S.R. was organized to head the many branches of the Academy located in Siberia and the Far East.

The Presidium of the Academy of Sciences of the U.S.S.R., headed by the Academy President and elected at a general meeting of the members, guides the Academy's work.

INCREASE IN NUMBER OF RESEARCH INSTITUTES AND SCIENTIFIC PERSONNEL

Research institutes

1914

1957

2756

289



Scientific personnel
(in thousands)

261.6

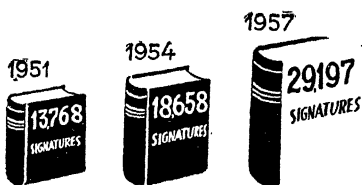
10.2



In 1917 the Imperial Academy of Sciences consisted of 13 scientific establishments, including one institute, five laboratories, five museums and two observatories, staffed by a total of 212 scientists.

SCIENTIFIC PUBLICATIONS (in signatures)

The Academy of Sciences of the U.S.S.R. unites 200 institutes and research centres, staffed by 17,600 scientists.



Outstanding foreign scientists have been elected to the Academy of Sciences of the U.S.S.R. Among them are: Hadamard Jacques (France), Bernal John (Britain), Bohr Niels (Denmark), Born Max (Federal Republic of Germany), Hertz Gustav (German Democratic Republic), Raman (India), Tourky

Ahmed Riad (United Arab Republic), and others.

There are Academies of Sciences in all the Union republics (except Moldavia, where there is a branch of the Academy of Sciences of the U.S.S.R.) which evolved at different times from branches of the U.S.S.R. Academy of Sciences.

The Academy of Sciences of the Kazakh S.S.R., for instance, has 31 academicians, 27 corresponding members, 88 doctors of science, 480 candidates of science, 135 graduate students, 652 science graduates, and 1,176 laboratory technicians.

The Academy of Sciences of the U.S.S.R. has branches in: the Urals, Bashkiria, Daghestan, Kazan, Karelia, Moldavia, the Komi A.S.S.R., and the Kola Peninsula.

The Urals Branch is the largest of the eight. Its Institute of the Physics of Metals is the research centre for the theory of magnetism and solid bodies.

The Kazan Branch, created in 1945, is well known for its research in the field of phosphoro-organic chemistry and paramagnetic resonance.

There are also several specialized academies in the U.S.S.R.: the Lenin All-Union Academy of Agricultural Sciences, the Academy of Medical Sciences of the U.S.S.R., the Academy of Building and Architecture of the U.S.S.R., the Academy of Arts of the U.S.S.R., the Academy of Pedagogical Sciences of the R.S.F.S.R. and other branch academies in the Union republics.

Prior to the October Revolution there was not a single scientific research institute in industry or in any other branch of the national economy. As of January 1, 1956, there were 755 such institutes in the Soviet Union.

NUMBER OF SPECIALIZED SCIENTIFIC RESEARCH INSTITUTES

Industry	280	Public health	226
Building	32	Education	55
Transportation and communications	12	Culture and art	8
Agriculture	101	Others	41

In connection with the reorganization of management in industry and construction, many institutes have been singled out as leading institutes and are under the direct jurisdiction of the State Planning Committee of the U.S.S.R., while a number of institutes have been transferred to the jurisdiction of the various economic councils and state planning committees of the Union republics.

A wide-scale programme of scientific research is being carried on in the colleges and universities and in factory laboratories.

Thus, the laboratory of the Kirov Works in Leningrad is conducting a joint research programme with the Leningrad Electrical Engineering Institute. The laboratory of the Lugansk Locomotive Plant is co-operating with the Institute of Metallurgy of the Academy of Sciences of the U.S.S.R. The Paton Institute of Welding has close ties with many factory laboratories.

With each passing year the number of persons writing their dissertations and granted scientific titles increases.

	1947	1950	1955	1957
	(in thousands)			
Doctors of science	7.7	8.3	9.5	10
Candidates of science	36.9	45.5	78.0	87.2

The number of research workers in the Union republics is on the rise. In 1957 there were over 12,000 doctors of science and candidates

of science in the Ukrainian S.S.R., nearly 3,000 in the Georgian S.S.R. and over 2,000 in the Uzbek S.S.R.

One of the basic means of training scientists in the U.S.S.R. is the method of independent research on a chosen problem and graduate work (day school and evening courses for those who continue on the job) at all the colleges, universities and scientific-research centres.

Day-school post-graduates are paid monthly allowances.

NUMBER OF GRADUATE STUDENTS

(in thousands)

1929	3	1950	21.9
1940	16.9	1957	22.2

NATURAL SCIENCES

Just a few years back, there were not many people in the capitalist world that believed Soviet science had much to offer. "Russian question" experts expressed the view that Soviet science was lagging two to three decades behind science in the West and that, to take a particular case, Russian scientists would have to work another five to ten years before they got at the secret of atomic energy.

But actuality was this. In 1949, the U.S.S.R. made its first test of an atom bomb. In 1953—this time ahead of their American colleagues—Soviet scientists produced a thermonuclear charge. 1954—the U.S.S.R. brought into operation the first atomic power station in the world. 1957—the Soviet Union was again first to carry out successful tests of a super-range, multi-stage, intercontinental ballistic missile.

That same year Soviet science hurled into cosmic space the first artificial satellite of the Earth. 1958 and 1959 were marked by putting into orbit two Sputniks and three space rockets.

The myth of the "backwardness" of Soviet science vanished. People were now busy calculating how long it would take the United States of America to reproduce the attainments of Soviet science.

These remarkable achievements that have secured for Soviet science a place of leadership in some of the most important areas of world science, stem from a developed industry and a high level of scientific knowledge in all of the great family of natural sciences.

At the present time not a single branch of science or technology is capable of development without *mathematics*.

Soviet mathematical science has made a very important contribution to the theory of numbers. New methods in this field have been developed by I. M. Vinogradov. One of his contributions has to do with methods that permit representing any sufficiently large odd number as the sum of three simple numbers.

The theory of the functions of a complex variable, developed by N. Y. Zhukovsky, S. A. Chaplygin, N. I. Muskhelishvili, M. V. Keldysh, and M. A. Lavrentyev, has found numerous applications in hydrodynamics, aerodynamics, the theory of elasticity, field theory, and elsewhere.

To cite an example, using this theory as a basis, it has been possible to solve such important problems as calculating the lift force of an airplane wing and determining the optimum shapes and dimensions of wings and fuselage.

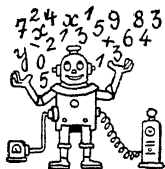
Investigations into the theory of stochastic processes carried out by A. N. Kolmogorov and A. Y. Khinchin have found application in mechanics, physics and engineering.

Probability theory is widely used in everyday life; it helps to resolve such practical problems as determining the quality of produce by sampling, calculating the duty loads of telephone lines, etc.

Soviet mathematicians are successfully advancing such new trends as information theory and the theory of programming problems in electronic computers. Mathematical logic is finding important applications, too.

In the development and application of mathematics, of great significance is the construction of high-speed electronic computing machines. Within the past ten years, Soviet scientists have constructed five types of these machines—two big ones, the High-Speed Electronic Computer, known for short as BESM, and the “Strela” (“Arrow”), and three small-size ones, “M-2,” “M-3,” and “Ural.”

These new computing machines have solved a multitude of the “hot” problems of present-day science and technology. The “BESM”



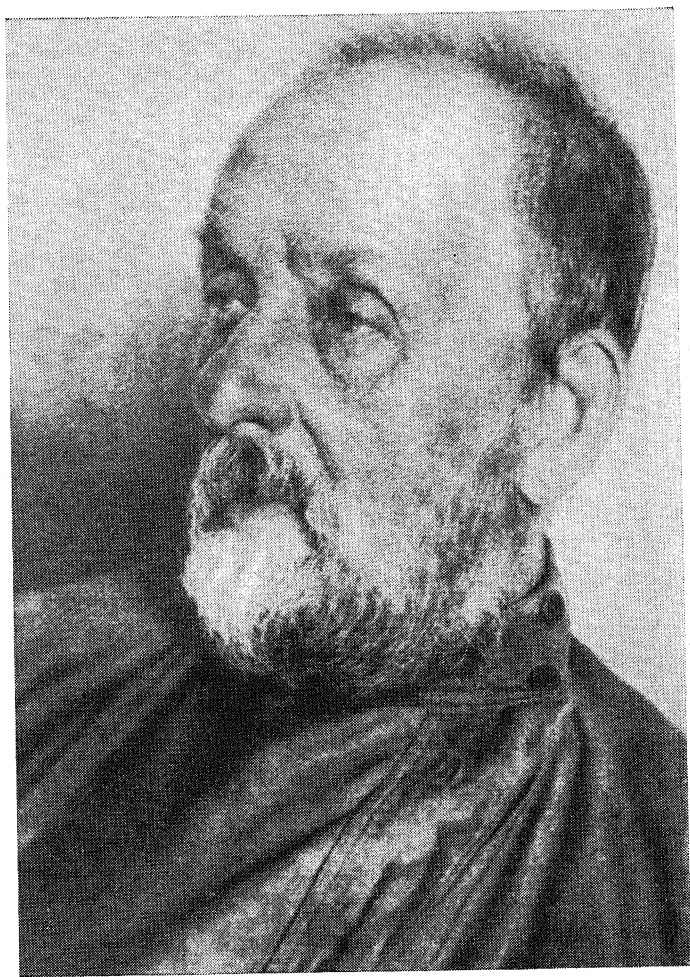
machine calculates at the rate of 10,000 operations per second. It handled the computational work for the compilation of a set of geodesic maps in a matter of only 20 hours, solving a total of 800 equations and carrying out 250 million arithmetical actions. One man with a desk calculator would complete the same job in 200 years! But the point is not in the speed alone. Electronic computers have enabled scientists to undertake the study of problems that earlier did not submit to solution due to their computational intricacy. This is already being felt and will have a still greater impact on the rate of scientific and technical progress in the future.

Soviet investigators have worked out the scientific principles for applying electronic computers to planning and statistical work concerned with the national economy. This will permit introducing new, improved computational methods, and rapid processing of the enormous flow of economic information arriving from all parts of the U.S.S.R.

Mathematical techniques are widely used in *mechanics*, which present-day technology has confronted with fundamentally new problems.

The successes of Soviet aircraft construction, rocketry, and jet techniques would be impossible without the development of a series of theoretical problems that have been given brilliant solutions by Russian scientists, both pre- and post-revolutionary.

N. Y. Zhukovsky gave us the theory of the flow motion of an incompressible fluid past a profile, he explained the nature of the lift force, and created the first vortex theory of an aircraft screw, which



Konstantin Tsiolkovsky



led to a rapid development of aircraft construction in the U.S.S.R. and other countries.

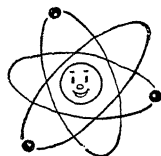
S. A. Chaplygin developed a theory of gas jets that played an important part in surmounting the "sound barrier" (achieving supersonic flight) in aviation.

K. E. Tsiolkovsky—founder of the theory of reactive motion and inventor of guided missiles—was first to suggest putting into orbit artificial

Earth satellites and laid down the groundwork for solving one of the most stupendous problems ever posed by man—interplanetary flight.

According to celestial mechanics, to escape the Earth's gravitational field a body must attain a speed of 11.2 kilometres per second. This is the escape velocity. It is also called the second astronomical velocity, the first being the orbital velocity of 7.9 kilometres per second required to establish an artificial satellite in an elliptical orbit about the Earth. To do this one has to build a carrier rocket capable of imparting the required velocity. The principal difficulty in building a rocket lies in designing the engines and creating the fuel.

Soviet scientists, designers and engineers resolved these problems and took the first step towards conquering outer space. The U.S.S.R. was the first country in the world to launch an artificial satellite of the Earth.



Satellite (Sputnik)	Date launched	Weight	Shape	Maximum height above Earth (apogee)	Orbital period	Remarks
I	Oct. 4, 1957	83.6 kg.	Spherical Diam. 58.3 cm.	947 km.	96.17 min.	This satellite had on board a passenger, a dog called Laika.
II	Nov. 3, 1957	508.3 kg. (instrumentation, animal, power supply)	—	1,671 km.	103.74 min.	
III	May 15, 1958	1,327 kg.	Conical, Max. diam., 1.73 m. Height, 3.57 m.	1,880 km.	105.95 min.	

On January 2, 1959, the Soviet Union successfully launched a cosmic rocket. This was the first vehicle in human history to reach and exceed the escape velocity of the Earth. The last stage of the rocket, weighing 1,472 kilograms (this does not include the weight of the fuel), settled into an orbit about the sun and became the first artificial planet of the solar system.

Eight months later, on September 12, 1959, the second Soviet space rocket was launched. After covering a tremendous distance along its planned course, it reached the Moon's surface on September 14, at 00 hours, 02 minutes, 24 seconds, Moscow time. It was the first trip in history.

A month later the third Soviet space rocket, the inter-planetary automatic station, rounded the moon.

During the past several decades, *physics* has taken up a place of leadership among the other natural sciences. Achievements in this field have led to results that are opening up a new era in the development of the productive forces of society—the era of atomic power. The chief task of present-day physics is to learn about the nature, the properties, interactions and interconversions of elementary particles.

1930—V. A. Fok produced a method for detailed analysis of atomic structure. The method of solving quantum mechanical problems with regard to the many-electron atom (it subsequently became known as the Hartree-Fok method) is widely used in studying the properties of atoms, molecules and nuclei.

1929-31—D.V. Skobeltsyn obtained the first information to indicate the existence of showers of particles of cosmic radiation. This played a big role in subsequent studies of the origin of cosmic rays.

Cosmic rays originate in the depths of outer space. They are a natural source of different types of elementary particles. Only a small part of them reach the Earth. For this reason, artificial Earth satellites instrumented to detect the different particles that make up cosmic radiation are particularly important in studies of the Universe. In this respect, the third Soviet Sputnik was well equipped.

1935—Igor Kurchatov discovered nuclear isomerism in artificially radioactive elements, thus contributing to a more profound understanding of nuclear structure.

Isomerism is the possibility of the existence of nuclei with the same number of protons and neutrons but with unlike physical properties.

1936—Y. I. Frenkel proposed a liquid-drop model of the nucleus, which was further developed in the theory of nuclear fission. The present, generally accepted view concerning the origin of nuclear forces was first advanced by I. Y. Tamm.

1944—V. I. Veksler developed the principle of phase stability, which made it possible to accelerate elementary particles to energies a hundred-fold and more above those previously attained.

Scientists were now able to study the behaviour of elementary particles at unusually high speeds. This was





Igor Kurchatov

the underlying principle of the largest accelerator of protons in the world put into operation in 1957 in the U.S.S.R. This machine is called a proton synchrotron and can accelerate protons to energies up to 10,000 million electron volts — something that has never been obtained before in any other country.

A big contribution to the development of Soviet physics has been made by the works of Igor Kurchatov, A. I. Alikhanov, Dmitry Blokhintsev and A. P. Alexandrov, who are builders of nuclear reactors for research and power.

Now, with nuclear power stations a technically accomplished fact, the energy sources of the heavy uranium nuclei are open for exploitation. But there is not so much uranium on the

earth, probably only enough to last a century or two.

The problem now is to accomplish a thermonuclear reaction in controlled form. Here, most important are thermonuclear reactors fuelled with pure deuterium (hydrogen of atomic weight 2). The energy stored up in one litre of ordinary water is roughly equivalent to that in 400 litres of petroleum. A thermonuclear reactor—when it is built—will solve the fuel problem once and for all time.

In 1950, A. D. Sakharov and I. Y. Tamm proposed the first model of a magnetic thermonuclear reactor. 1956 saw the publication of research carried out at the Institute of Atomic Energy of the U.S.S.R. Academy of Sciences under the leadership of L. A. Artsimovich and M. A. Leontovich. Soviet physicists heated rarefied deuterium to temperatures exceeding a million degrees and observed the emission of neutrons. This work, which opens the way to controlled thermonuclear reactions, brought its authors the 1958 Lenin Prize.

1953—G. I. Budker proposed and in 1954 designed a system embodying so-called magnetic plugs that play the part of plasma insulators. These systems are now called adiabatic traps. The biggest one, at the Institute of Atomic Energy, is the "Ogra" machine that was developed under the scientific guidance of I. N. Golovin.

1958—A 5,000-kilowatt fast-neutron experimental reactor was placed in operation.

Soviet research in the field of controlled thermonuclear reactions has been summarized in a four-volume work entitled *Plasma Physics and the Problem of Controlled Thermonuclear Reactions*.

Considerable progress has been made in optics.

L. I. Mandelshtam and G. S. Landsberg discovered (simultaneously with the Indian physicist C. V. Raman) the combinational scattering of light, also known as the Raman effect. Studies carried out by Sergei Vavilov and his school have given explanations to the principal laws of luminescence.

Fluorescent lamps (daylight lamps) are 2.5 to 3 times as economical as incandescent lamps. Luminescent analysis is widely used in research and also in medicine as a diagnostic aid that simplifies detection of microbes. In agricultural practice luminescent analysis is used to determine the quality of fruit, vegetables and cereal crops in storage.

The Soviet scientists P. A. Cherenkov, I. Y. Tamm and I. M. Frank received the 1958 Nobel Prize in physics for the discovery and interpretation of the radiation emitted by electrons moving in a medium with a velocity greater than that of light in the same medium (the Cherenkov effect).

Soviet scientists have contributed a great deal to solid state physics. They have explained contradictions in the theory of rigidity and plasticity, disruptive discharge and current passage through dielectrics. New effects have been found in strengthening solids, an explanation has been given to the mechanism of the plasticity of crystals and their destruction under the action of mechanical forces. Studies have been made of the mechanisms of cold brittleness of metals and phase changes, such as the martensitic transformation so important in steel metallurgy.

These latter advancements in physics have found broad applications in the creating of new, and the radical improvement of existing, technological processes in rolling (research at the Institute of Ferrous Metallurgy under the supervision of I. P. Bardin) and metal welding (at the Paton Institute of Electric Welding in the Ukraine).

Y. K. Zavoisky discovered the phenomenon of paramagnetic resonance, which underlies a new and powerful method of physical investigation into the structure of solids and liquids.

P. L. Kapitsa discovered the superfluidity of liquid helium at temperatures close to absolute zero. He also designed apparatus for obtaining liquid air and oxygen, and a device for obtaining liquid helium. L. D. Landau has proposed a microscopic theory of superfluidity.

An important role in the development of science and technology has been played by research into the properties of semiconductors begun by A. F. Yoffe and continued by other Soviet workers.

Theoretical and experimental studies of semiconductors have resulted in crystal diodes and triodes (transistors) now used in radio electronics, computer electronics and automation. They replace vacuum tubes and permit building small-size and highly reliable automatic devices. In the "M-3" computer, for example, a portion of the electron tubes was replaced by four thousand diodes, thus cutting the

area occupied by the machine to only three square metres. The time is not far off when it will be possible to put this machine, that takes the place of hundreds of human computers, into a suitcase.

Radio physics and radio engineering have made deep inroads into the life of the twentieth century and have transformed completely both science and technology, and living conditions as well. Here too, Soviet scientists and engineers have made a big contribution.

1932—In the Nizhny-Novgorod Radio Laboratory, Soviet engineers and workers under M. A. Bonch-Bruyevich built the most powerful radio-telephone station in the world.

1932—A system of unitized tube generators, proposed by A. L. Mints, was first put into practice at the 500-kilowatt radio station. This method was later made use of by the Americans for the powerful radio station at Cincinnati.

1930-39—The principles of radar were worked out and the first radar stations for aircraft detection were built. Radar developments were based on new-type Soviet-designed generators of super-high frequencies. Radar brought with it pulse techniques that have revolutionized the field of radio.

1941-43—A radio station was built which to this day holds the lead as the most powerful station in the world.

N. G. Basov and A. M. Prokhorov created a molecular generator of ultra-short stable-frequency radio waves. The principles underlying this generator will produce a revolutionizing impact on radio engineering and related fields. A molecular clock—a super-timekeeper that utilizes the molecular generator—will neither lose nor gain even so much as a second in the course of half a century.

Soviet scientists have also added much to the field of *geophysics*.

Otto Schmidt and colleagues have proposed a cosmogonic theory of the origin of the Earth.

According to this theory, the Earth is believed to have formed from a gas-dust cloud. Originally, the Earth was cold. During the formation period, the Earth received a small amount of heat due to the impacts of falling particles and to compression of matter in the interior. The high temperature inside the Earth is apparently due to the accumulation of radio-active heat.

In the U.S.S.R., there has been established a control gravimetric system.

Gravity studies on the territory of the Soviet Union have made it possible to determine the shape figure of the Earth with greater precision; this is very important in the compilation of precise geographical maps, and also for studies of the structure and properties of matter at great depths. Soviet scientists are carrying out precise determinations, in time, of oscillations of the surface level of the Earth produced by lunar and solar gravitational forces. For example, it has been established that this level varies in Moscow from 20 to 30 centimetres.

A network has been established of seismic stations equipped with the most up-to-date apparatus for recording earthquakes. These stations permit determining the site of origin of earthquakes, their intensity and depth. The data obtained permit determining the degree of seismic activity of different regions of the country. Soviet scientists

have compiled a map of seismic classification of the U.S.S.R. (scale: 1 to 5,000,000) and an *Atlas of the Seismicity of the U.S.S.R.*

An overall magnetic survey has been made of the territory of the U.S.S.R. It encompasses over 20,000 sites at which are recorded the principal elements of the geomagnetic field.

Great changes have taken place of late in the apparatus used to study the structure of the Earth's interior. Exploratory techniques applied in the search for mineral resources have made it possible to look deeper and more discriminatingly into the crust of the Earth. Seismic techniques (studies of the propagation of elastic waves in the Earth, produced by small explosions—shots) have made possible a study of the crust structure to depths of 60 kilometres. Radio-active radiations are being utilized in the search for ore and oil deposits.

New types of gravimeters, new instruments for measuring weak magnetic fields, and many others have appeared.

Much attention is being paid to the *physics of the atmosphere*, particularly in its upper layers. Radiosondes are used in atmospheric studies, and, during the past ten years, rockets have been effective in investigating the upper levels of the atmosphere. But still more information is being got from artificial Earth satellites.

The application of modern physical methods of investigation to *astronomy* has led to a series of significant achievements in this field.

The Soviet Union has a large network of observatories, at the head of which is the famous Pulkovo Observatory. Observatories have appeared in the Union republics—Armenia, Georgia, Kazakh S.S.R., Tajik S.S.R., Uzbekistan, the Ukraine, Estonia and elsewhere.

G. A. Shain and co-workers of the Crimean Astrophysical Observatory have obtained new data on the nature of diffuse matter in interstellar space. Dozens of gas nebulae have been discovered and studies have been made of magnetic fields of the outer space. The interrelationships between these fields and interstellar gas are now much more clearly understood. All of this is very important for an understanding of the origin of cosmic rays and the structure and development of stellar systems.

V. A. Ambartsumyan and other Soviet astronomers regard star formation in our Galaxy as a continual process. Ordinarily, stars are believed to form in groups, in so-called stellar associations.

Using the new 50-centimetre meniscus telescope at Alma-Ata, V. G. Fesenkov has obtained new results in the study of "stellar chains," that is, stars arranged close to one another in a row.

The U.S.S.R. has the most extensive network of solar service stations in the world. They are equipped with specialized modern instruments that make possible constant observation of solar processes over long periods of time.

Soviet astronomers have obtained new data on the physical conditions in the Sun's atmosphere and have come to the conclusion that the temperatures and densities are extremely inhomogeneous. The emission mechanism of solar flocculi has been given an explanation. In magnetic fields on the Sun processes have been detected that are accompanied by ejection of atoms and the formation of high-energy particles.



An international centre engaged in the compilation of a catalogue of variable stars has its headquarters in the U.S.S.R. In 1958, this catalogue came out in a second edition with descriptions of 15,000 stars.

Soviet science is now preparing for the jump to outer space.

Development of the *chemical sciences* in the Soviet Union is closely bound up with the building and development of the chemical industry, the production of acids, alkalis, salts, fertilizers, motor fuel, synthetic rubber, plastics, plasticizing agents and solvents, artificial and synthetic fibres, etc.

In 1918, the Academy of Sciences was requested by the Soviet Government to work out a method of extracting radium from domestic uranium ores. This was accomplished in 1921. The pilot radium plant, under the guidance of V. G. Khlopin, produced the first preparation of Soviet radium. Thus was the scientific groundwork laid for the industry of radium and natural radio-active elements.

N. S. Kurnakov's method of physico-chemical analysis found wide application in studies of phase equilibria and the transformations of systems of salts, metallic alloys, organic compounds, etc.

In 1925 Kurnakov's investigations led to the discovery of the large deposits of potassium (and magnesium) salts in the world at Solikamsk. Later, potassium salt was also discovered in the Ural-Emba area.

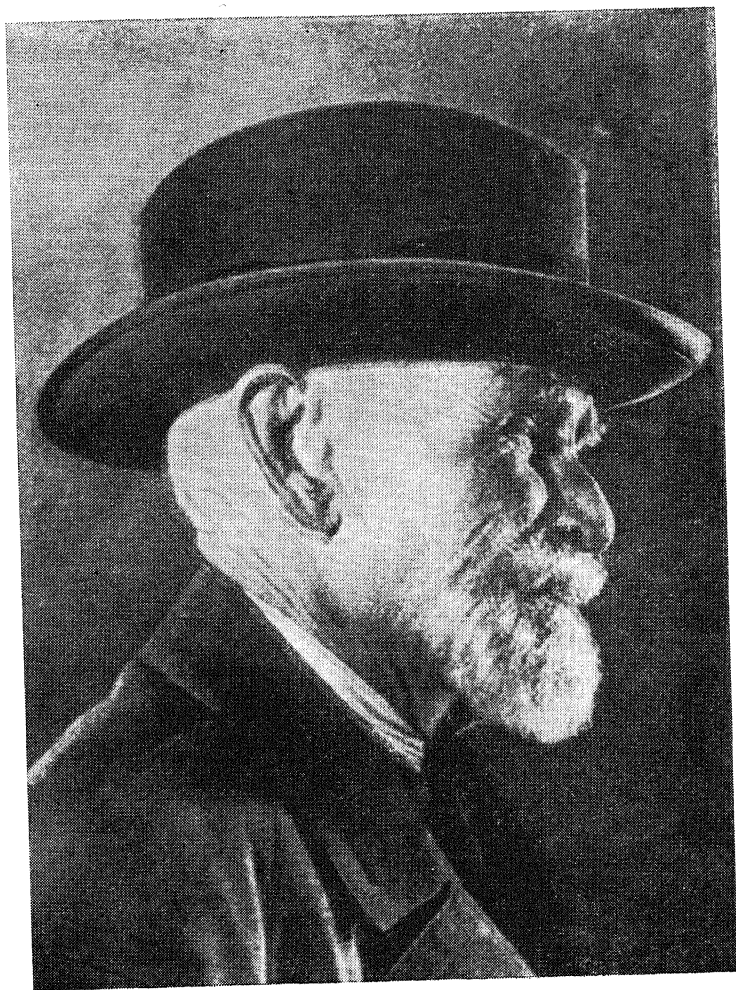
The name of N. D. Zelinsky is associated with big advances in the chemistry of the catalytic transformations of hydrocarbons, such as research into contact-catalytic processes, the chemistry of petroleum and the refining of benzines, all of which are very important practically.

Soviet scientists have made a very big contribution in the building of a modern theory of chain reactions.

Chain reactions are very widespread in chemistry. They include polymerization reactions that underlie the production of plastics, artificial fibre and rubber; oxidation reactions, cracking, and others. N.N. Semyonov and his school have made a particularly important contribution in the discovery and study of branched-chain processes that form the basis of chain combustion and other phenomena which cannot be explained by classical theories. For work in the field of chain reactions Semyonov received the 1956 Nobel Prize in chemistry.

Russian science, both pre- and post-revolutionary, has made significant contributions to polymer research creating many new chemical substances. Fundamental work in this field was carried out by A. M. Butlerov. The Soviet Union is the birth-place of synthetic rubber. It was S. V. Lebedev who first worked out the scientific principles for the industrial production of synthetic rubber, which began in 1932.

Soviet scientists have worked out methods for the synthesis of polymer organo-silicon compounds (polyorganosiloxanes) that are stable under high and low temperatures. They are used in the form of liquids, resins, varnishes and glues in mechanical and electrical engineering and in other industries.



Ivan Pavlov

Progress in the field of high-molecular compounds has resulted in many new synthetic materials, such as, artificial fibres, plastics (organic glass, heat-resisting hermetics, foam plastics, etc.), film-forming materials with excellent protective properties, and so forth.

As regards certain properties, synthetic fibres surpass the natural product. First of all, they are cheaper. Plastics are half the weight of aluminium and from 5 to 8 times as light as steel.

Alexander Nesmeyanov and his pupils have established new methods of organometallic and organo-element synthesis, and initiated the production of a number of new types of substances that are valuable industrially.

Important results have been achieved by A. Y. Arbuzov and his school in the chemistry of the organic compounds of phosphorus. Research in this field has yielded new types of highly effective insecticides and new medicinal substances.

Closely connected with the national economy and with public health is Soviet *biological science*.

An exclusive role in the development of plant biochemistry was played by the school of the outstanding Russian plant physiologist Konstantin Timiryazev. Timiryazev became famous through his investigations into the assimilation of carbon dioxide by green plants in light (photosynthesis) and also by his work in the physics and chemistry of chlorophyll.

The work of A. N. Bakh—founder of present-day concepts in the chemistry of respiration and leader of a school of Soviet biochemists—is a shining example of the interconnection of theory and practice. Soviet biochemists have done great service in improving food-industry technology (bread making, wine making, the tea and tobacco industries, the drying of grain, and so forth).

In physiology the work of Ivan Pavlov is pre-eminent. It was only after the Great October Revolution that Pavlov was able to develop his ideas on a grand scale. During the Soviet period, he created his theory of types of higher nervous activity and formulated the concept of the second signal system—the specifically human type of nervous activity that underlies all human thought.

Another outstanding Soviet scientist is Ivan Michurin, who created new varieties of cultural plants. He studied the conditions of variability of plant organisms and ascertained the influence of external conditions on variability. Michurin's experiments yielded over 300 varieties of valuable fruit plants. Michurin developed a theory for the acclimatization of southern plants in northern regions.

It is through his work that we are now able to grow such southern plants as grapes, melons and peaches in the central black-earth belt. Of late, still more striking results have been achieved. Tomatoes are being grown near Arkhangelsk. Potatoes, turnip cabbage, turnips, cabbage, and radish have pushed north beyond the Arctic Circle. Siberia now has something like 25,000 hectares of orchards.

The prominent Soviet agriculturist V. R. Williams developed V.V. Dokuchayev's theory and made a big contribution to modern soil

science and agriculture. His theory of a unified soil-forming process and the grassland system of farming that he developed are widely used in today's agriculture.

D. N. Pryanishnikov developed a rationalized system of the use of mineral fertilizers and was one of the most prominent organizers of the industry of mineral fertilizers.

Trofim Lysenko has proposed a theory of the phasic development of plants. An understanding of the phenomenon of winter cereals, of biennial and perennial technical and fodder crops has made it possible to reduce the maturing periods of plants, for instance, the maturing of biennial plants in the first year. This is utilized in developing new varieties.

Physiological research in technical microbiology, carried out by V. N. Shaposhnikov and others, has extended the field of application of microorganisms in industry and agriculture. These investigations have served as a basis for the production of butyl alcohol, acetone, lactic acid, vitamins, food and fodder yeasts, wood alcohol, and so forth.

The development of Soviet *geology* is intimately bound up with the discovery, exploration and industrial development of numerous mineral deposits.

In "An Outline Plan of Scientific and Technical Undertakings," written in 1918, Lenin called the particular attention of the Academy of Sciences to the necessity of making a systematic study and investigation of the natural productive forces of Russia. The solution of this monumental problem was an important condition for the rapid growth of socialist economy.

On direct instructions from Lenin, I. M. Gubkin posed the problem of efficient utilization of combustible shale. His investigations into the genesis of petroleum helped in the discovery of new oil deposits.

As early as 1919, a beginning was made (through the efforts of P. P. Lazarev, A. D. Arkhangelsky, and I. M. Gubkin) in the study of the Kursk Magnetic Anomaly, which led to the discovery of enormous deposits of iron ore. During subsequent years great progress was made in the development of these deposits.

Expeditions under A. Y. Fersman to the Kola Peninsula culminated, in 1925, in the discovery of a large number of mineral deposits, including the world's largest deposits of apatite-nepheline ores—a source of phosphoric acid, fertilizers for agriculture, etc.

Geological explorations during the period of Soviet power have covered all regions of the country: from the Kola Peninsula in the north-west to Kamchatka in the east and from the Taimyr Peninsula in the north to the Pamirs and the Kara-Kum Desert in the south. Enormous reserves of raw materials have been discovered. They include oil deposits between the Urals and the Volga, in Turkmenia, Uzbekistan, near the Emba River and the Carpathian mountains; the Khibiny apatites; Kara-Tau phosphorites; the Karaganda and Pechora coal-fields; Ural chromites; iron ores near the Angara and Belgorod; Turgai bauxites; fuel gases near Stavropol, in the Ukraine, and along the



Volga; hydropower from the great Siberian rivers, to name just a few. Particularly significant is progress in the search for and discovery of deposits of non-ferrous and rare metals and radio-active ores. Outstanding among the geological discoveries of recent years is that of extensive diamond fields in Yakutia.

Resulting from the geological studies of the territory of the U.S.S.R. are state geological maps (scale: 1 to 5,000,000 and 1 to 2,500,000), a tectonic map of the U.S.S.R. (scale: 1 to 5,000,000), and a geological map of the U.S.S.R. (scale: 1 to 1,000,000) now nearing completion. More detailed geological maps have been made of large areas of the U.S.S.R., in addition to a series of specialized maps, such as hydrogeological, paleogeographical, maps of Quarternary deposits, and others.

Studies of mineral deposits and also investigations into the composition and properties of new types of mineral raw materials have been of great importance in the development of the country's economy. This is illustrated in the building of new branches of industry dealing with aluminium, vanadium, titanium, uranium, cobalt, molybdenum, graphite, abrasives, mica, kaolin, talc, sulphur, arsenic, rare earths, etc.

In the U.S.S.R. the science of *geography* has developed considerably.

The application of aerosurveying has made it possible to map the entire territory of the country topographically. Maps and atlases of the U.S.S.R. have been published.

Soviet geographers have participated in studies of the little-known parts of the country (for instance, in putting virgin and long-fallow lands under cultivation), in solving problems connected with optimum distribution of farm land, the planning of railway lines, the building of irrigation and land-reclamation installations, etc.

In 1918, right at the height of the Civil War, Lenin signed a decree on the organization of a hydrographic expedition to study the Arctic Ocean. Twenty-two vessels were put at the disposal of this undertaking.

The seas and oceans were explored, thus making it possible to compile the first maps for fisheries, to forecast hydrological and climatic changes and give ice forecasts to vessels sailing the North Sea Route.

Studies of the Polar basin have yielded much valuable information, including the discovery of the Lomonosov submarine ridge. Submarine ridges, mountains and abysses have been found in the Pacific Ocean. Boundaries have been established for the areals of fauna associations of various origin, and the view of lifeless ocean abysses has been proved erroneous. Over 200 new species of animals have been discovered.

The famous expedition of Papanin, Krenkel, Fyodorov, and Shirshov to the North Pole in 1937 initiated a systematic study of the Arctic. For several years now, a number of polar stations have been carrying on multi-purpose investigations in this region.

Soviet scientists took an active part in the International Geophysical Year. Valuable results have been obtained by the Soviet Antarctic stations at Mirny and elsewhere.

By decision of the Fifth Assembly of the Special Committee of I.G.Y., which was held in Moscow in August 1958, the International Geophysical Year is to be continued up to December 31, 1959. In 1959, Soviet scientists plan to set up a new station in the Antarctic—at the Pole of Inaccessibility.

The U.S.S.R. has also made outstanding achievements in other fields of natural science.



SOCIAL SCIENCES

The social sciences are an extensive and extremely important area of human knowledge. As man senses his own being through his ability to feel and think, so does society sense itself, its needs and perspectives of development through political economy, philosophy, history, law, ethnography, linguistics and other social sciences.

Their role should not be underestimated, for the social sciences are influential in shaping economic, political and ideological institutions.

The founders of Marxism-Leninism created a science dealing with society and expressing the interests of the working class.

Soviet science, developing on the basis of Marxist-Leninist teachings, has achieved great successes in the further study of the laws of society. In a socialist society the social sciences come to the fore, to take their rightful place beside the natural sciences.

Immediately after the Revolution, the Communist Academy was founded, and a serious study of the problems of social sciences was begun. In 1936 the Communist Academy became part of the U.S.S.R. Academy of Sciences. Now institutes of philosophy, law, history, economics, ethnography, the history of material culture, of world economics and international relations, of Slav philology, oriental studies, sinology, the history of art, linguistics, world and Russian literature and others have an army of qualified scientific workers. They co-ordinate and organize research work being carried on by tens of thousands of scientists working in other research centres and in universities and pedagogical institutes. The Academy publishes a great many scientific works and dozens of magazines on all the social sciences.

In a society where the results of scientific work have great practical significance and in many ways determine the roads and perspectives of any of a number of economic, political and ideological processes, the development of the social sciences becomes a matter of national importance. The Communist Party is greatly concerned with creating the necessary conditions for scientific work. On the basis of the generalized results of scientific research and the collective experience of practical work, the Party evolves a scientifically valid policy at every given stage of the country's development. Documents of the many Party Congresses and of its Central Committee and the works of outstanding Party leaders contain a thorough analysis and a creative ap-

proach to the most important problems of the Marxist-Leninist social sciences.

Soviet *philosophy* further developed the problems of dialectical and historical materialism.

V. I. Lenin's great work *Materialism and Empirio-Criticism* was written in 1908. Since then science has become enriched by the greatest discoveries (the theory of relativity, the quantum theory, the corpuscular theory of light, etc.), it has unravelled new mysteries of matter and been confronted with ever new mysteries.

The philosophical generalization of the findings of contemporary natural sciences, the struggle to defend materialism against an idealistic explanation of scientific discoveries is the goal to which Soviet philosophers have dedicated their efforts. Sergei Vavilov has made an important contribution in this field (represented by such works as *New Physics and Dialectical Materialism*, *The Dialectics of Light Phenomena*, *Lenin and Physics*, *The Main Trends in Modern Physics*). A number of works deal with research in such major fields of dialectical materialism as the theory of knowledge, dialectical and formal logics (works by B. M. Kedrov, M. M. Rosental, and others).

Soviet philosophers have been persistently at work generalizing the experience gained from contemporary social development, studying such aspects of historical materialism as classes and class struggle, forms of social consciousness and the laws governing the period of transition from capitalism to socialism (works by P. F. Yudin, P. N. Fedoseyev, F. V. Konstantinov, D. I. Chesnokov, G. Y. Glezerman and others).

Great stress is placed on the study of the history of Russian and West-European philosophy, of the philosophies of the East. The first of the many volumes of *The History of Philosophy* have appeared in print.

The existence of social ownership and a socialist economy gives rise to a whole series of new economic laws. The progress of society in many ways depends on the extent to which the demands of these laws are taken into account in the country's economic policy. *Political economy* plays a major role in the study of the general laws governing a socialist economy, in evolving the principles of development of the national economy and the scientific methods of organizing production and distribution.

The basic economic law of socialism, that of a planned, proportional development of the national economy, makes it possible to provide for a thorough and purposeful guidance of the national economy while retaining the necessary balance between its various branches and striving for extremely high indices. However, a planned economy can prove its superiority only if truly scientific methods are used, only if all demands are taken into consideration—beginning with the needs of a single member of society and including the interests of whole branches of industry, of the national economy as a whole, of the nation's defence, etc. Science alone, with its methods of analysis, evaluation and generalization of facts and its general conclusions and principles, is able to cope with such a problem.

One of the greatest achievements of Soviet economics was the creation of a new branch of science, that of planning, based on Lenin's ideas,

presented in the following works: *The Immediate Tasks of the Soviet Government*, *Rough Draft of the GOELRO Plan* and others. A number of the major economic problems of socialism are dealt with in works by J. V. Stalin. G. M. Krzhizhanovsky, V. V. Kuibyshev, V. I. Mezhlauk, V. S. Nemchinov, S. G. Strumilin and others have contributed greatly to creating the science of planning and to developing the study of economic zoning of the country and the distribution of productive forces.

Soviet economists are working on methods of determining production capacities, of putting the principles of cost accounting to use, on questions of the economics of labour and wages. One of the main tasks of economics is the further detailed study of these vital problems.

In the past few years a number of basic works on the history of the national economy of the U.S.S.R. have been written.

Soviet economists have made an important contribution to the Marxist analysis of the economy of modern capitalist society (works by Y. S. Varga, L. A. Leontyev, I. A. Trakhtenberg and others).

Soviet law has played a major part in studying the organizational problems and workings of the first socialist state, its principles of law and politics.

How must the apparatus of the new, socialist state be constructed to best comply with the goals of the dictatorship of the proletariat, to provide for the participation of the broad masses in governing the country and bring to a minimum the possibility of bureaucratic distortion? Which laws should govern civil and family relationships in the new society, what punishment should be meted out to persons infringing upon its laws, and how must the courts be organized? The solution of these and many other problems faced the Soviet lawmakers. They had no time to meditate in the stillness of their studies: in the actual course of events they were forced to answer questions presented by life itself, and this on extremely short notice.

The scientific principles of organizing the political system of socialism are set forth in several works by V. I. Lenin, particularly in *The State and Revolution* (1917). Under Lenin's guidance the first Constitution of the R.S.F.S.R. was drawn up in 1918. Following his ideas, the lawmakers added many valuable suggestions to the writing of the 1936 Constitution of the U.S.S.R. and the constitutional laws of the Union republics.

The greatest achievement of Soviet law was the creation of the various law codes: civil, criminal, legal procedure, labour, collective-farm, marriage and family, and others, which, in their entirety, make up a unified system of the laws of the new socialist state. The works and efforts of P. I. Stučka, N. V. Krylenko, and D. I. Kursky were of immeasurable value in this field.

One of the characteristics of the Soviet society is its fast tempo of development. Many laws which were useful twenty to thirty years ago are now becoming obsolete and must be defined more precisely. The most important challenge to the lawmakers is the problem of constantly keeping abreast of changes taking place in the nation, of bringing these changes to the attention of the legislative bodies.

Soviet jurists have also added their contribution to the development of international law (Andrei Vyshinsky, S. A. Golunsky and others). The foreign policy of the U.S.S.R. has consistently followed the noble principles of standing by one's obligations, of equality, the recognition of the rights of all peoples to self-determination, etc., it has proved instrumental in the development of good-neighbour relations and is becoming ever more widely accepted.

Soviet *historians* had to critically review the entire course of history and re-evaluate, from a scientific, Marxist-Leninist point of view, the sum total of facts which had accumulated over the centuries.

In the past, history was mainly concerned with describing the lives of kings, generals, and philosophers, attributing to them the role of history makers. As for the peoples, they were described as an inert mass, as a background for their outstanding personalities.

Guided by the principles of historical materialism, in studying a given problem, Soviet scientists proceed from the premise that the *people* create history. They focus their attention chiefly on an analysis of existing socio-economic factors and popular movements, the true makers of history.

As a result, there evolves a scientific solution to the major problems of Russian history: the origin of feudalism in Russia, the origin and development of a centralized state, the development of capitalism and the revolutionary movements (works by B. D. Grekov, S. V. Bakhrushin, M. N. Tikhomirov, A. M. Pankratova, M. V. Nechkina and others).

There are many works on the history of the U.S.S.R.—on the October Revolution and the Civil War, on socialist construction, the Second World War, the work of the Communist Party during various stages of the country's development. In the post-war years there have been generalized research works on the history of several peoples of the U.S.S.R.

There are important works on ancient history, mediaeval history, modern and current history (V.V. Struve, V. V. Bartold, Y. A. Kosminsky, I. Y. Krachkovsky, Y. V. Tarle, V. P. Volgin, S. D. Skazkin, A. S. Yerusalimsky, Y. M. Zhukov, B. F. Porshnev and others).

In the field of *archaeology*, numerous expeditions have added much to the study of the history of the peoples inhabiting the Soviet Union, their cultures, the formation of the different states, etc. These archaeological materials are generalized in the *Essays on the History of the U.S.S.R.*

The Novgorod expedition, headed by A. V. Artsikhovskiy, discovered many relics of the material culture and applied arts of Ancient Rus, they found an archive of "The Birch-Bark Deeds," the first known Russian written documents, which shed new light on the culture of Ancient Rus.

B. A. Rybakov's excavations at Chernigov, Tmutarakan and at other ancient Russian cities, have revealed the walls and 11th- and 12th-century churches described in the ancient chronicles.

In the burial mounds of the Altai S. I. Rudenko discovered mag-

nificent rugs, carts, wood-carvings, and other artistic articles dating to the Scythian period.

In diggings conducted at the site of the Urartu fortress Karmir-Blur in Armenia, B. B. Piotrovsky found structures dating to the 1st millennium B. C., and objects which characterize the cultural level of the Urartu State in the 8th century B. C. The Khorezm expedition to Central Asia, headed by S. P. Tolstov, has also produced valuable results.

Soviet *ethnographers* have presented an historical and cultural description of the life and ways of the peoples of the U.S.S.R. and of the peoples of the modern world.

Four volumes of the "Peoples of the World" series have already been published. These are: *The Peoples of Africa*, *The Peoples of Australia and Oceania*, *The Peoples of America*, *The Peoples of Siberia*.

An ethnographic map of Hindustan has been published, and similar maps of China, Indo-China and Indonesia are now in preparation. A map entitled "Peoples of the World" will soon appear in print.

Y. V. Knorozov was able to decipher the ancient writing of the Mayas. In collaboration with N. A. Putinov he discovered the key to the equally mysterious writing of the tribes of Easter Island.

The greatest achievement of Soviet *linguistics* has been the creation of written languages for nearly 50 peoples of the U.S.S.R., who, prior to the Revolution, had no written language at all or at best a very primitive one.

Scientific grammars, explanatory and bilingual dictionaries were first compiled for the Bashkir, Kumyk, Altai, Karakalpak, Lezghin, Komi and many other languages. In the past seven years the Institute of Linguistics of the Academy of Sciences of the U.S.S.R. has compiled over 40 scientific grammars for more than 30 languages of the peoples of the U.S.S.R. and first class dictionaries of the various languages of the world. Much research has been done in the study of the theoretical problems of linguistics (works by V. V. Vinogradov and others).

THE HERO OF OUR TIMES

SOCIALIST IN CONTENT, NATIONAL IN FORM

Soviet literature, a literature of and for the people, was born with the Revolution. In two score years of fruitful if arduous progress, it has developed a new method known as socialist realism. Using this method, which calls for a truthful and concrete description of reality going through revolutionary changes, Soviet writers have created a great many outstanding books. Their works tell the world about our way of life and about the hero of our times, an ordinary working man building a new world.

The prime mission of Soviet literature is vigorously to promote the new, socialist way of life.

Maxim Gorky, the great proletarian writer who founded the method of socialist realism, said:

"Our realism is able and entitled to establish. The criticism it voices is levelled at the past and the reflection of the past in the present. Its fundamental task is to promote socialism through the depiction, by means of images, of facts, people and relations between people engaged in labour processes."

Soviet literature was created by several generations of writers. Its foundation was laid by proletarian authors who were linked with the revolutionary movement and who hailed the October Revolution.

Maxim Gorky began his literary career as a "stormy petrel" of the Revolution. Alexander Serafimovich did not hesitate to break with the literary environment which refused to accept the Revolution.

"It's my revolution!" said Vladimir Mayakovsky, who from the early days of the Revolution joined the heroic effort of the people. He was the life of the "ROSTA WINDOW," which displayed satirical posters of the Russian News Agency commenting in a militant spirit on major events in Russian life.

Demyan Bedny, whose early poetry was published in pre-revolutionary *Pravda*, sang the victory of the Revolution. His verses and fables, and above all his admirable poem *Main Street*, glorified the struggle for a new, progressive social system.

*From factory suburbs of smoke and heat
A New Master strode into the Street,
And instantly all underwent a change:
The Main Street quaked and grew very still,
Swooning with vaguely defined apprehension,
Numbed with the threat of the workers' will
Inflexible, masterly and firm in intention.*



Maxim Gorky



Vladimir Mayakovsky

*It's mine!
The street, the palaces and stores,
The banks, arcades, canals and shores,
The food, the gold, the fabrics fine,
All mine!
Museums, theatres, collections rare,
Books, gardens, parks and city squares,
The bronze and marble in statues confined,—
All mine!*

Most of the prominent representatives of pre-revolutionary literature sided with the revolutionary people. The ranks of the builders of a socialist culture were joined by Veresayev and Sergeyev-Tsensky, Shishkov and Prishvin, Podyachev and Chapygin, Aseyev and Grin, Teleshov and Gorodetsky, Chukovsky and numerous others.

Real men of letters could not but appreciate the aims of the Revolution, and the progress made in the socialist remoulding of the country. Alexei Tolstoi, an émigré, returned to Russia as soon as he understood the essence of the revolutionary changes taking place there, and placed his powerful talent of a realist writer at the service of his socialist country.

The victory of the Revolution gave rise to a new generation of Soviet writers, young people who had contributed to that victory.

Mikhail Sholokhov, author of *And Quiet Flows the Don* and *Virgin Soil Upturned*, who was born, and grew up, in a Don Cossack village, took part in fighting the kulaks. Vsevolod Ivanov, son of a Semipalatinsk teacher, tried many trades, and served in the Red Army. Another Red Army man was Boris Lavrenev, who began his military service prior to the Revolution. Dmitry Furmanov, to whom we are indebted for an unforgettable portrayal of Chapayev, the Civil War hero of legendary fame, fought, with a group of Ivanovo-Voznesensk workers forming part of the Chapayev division, against the troops of the counter-revolutionary General Kolchak. When still a young man, Alexander Fadeyev, author of *The Rout* and *The Young Guard*, took part in underground Bolshevik activities and in partisan warfare in the Far East. Nikolai Tikhonov entered literature wearing a Budyonny head-piece and Red Army leggings. The playwright Vsevolod Vishnevsky fought in the October days of 1917 as a sailor of the Baltic Fleet. The writer Nikolai Ostrovsky attained to maturity during the Revolution, which he continued to serve as a militant Communist writer even when an incurable disease had confined him to bed.

Soviet literature has always been multi-national. And as it developed it was enriched by the works of writers representing the country's numerous nationalities. Among these were Vilis Lācis and Pavlo Ty-china, Samed Vurgun and Yakub Kolas, Andrejs Upits and Hakob Hakobyan, Galaktion Tabidze and Nairi Zaryan, Pyatrus Browka and Gafur Ghulam, Mykola Bazhan and Georgy Leonidze, Sadridin Aini and Kondrat Krapiva, Sulaiman Rustam and Simon Chikovani, Alexander Korneichuk and Nathan Rybak, Mehti Huseinov, Mirzo Tursun-Zadeh, and many other writers enjoying widespread popularity.

The Union of Writers of the U.S.S.R. has over 4,000 members, representing more than 40 peoples.

In 1957 non-Russian fiction was published in a total of 50,700,000 copies.

The method of socialist realism helps writers depict life as it is. The Communist Party has always guided the progress of Soviet literature, fighting for its growth in terms of ideas and artistic values. It has offered friendly advice and also criticism which, if occasionally severe, has always benefited those who sincerely desired to serve their people.



Needless to say, the Party does not wield the writer's pen for him. But it sees to it that a writer's creative effort is not wasted on trifles and that literature is not reduced to pointless entertainment but is worthy of the people who have brought it into being.

ABREAST OF REALITY

In describing the life of the people, Soviet literature keeps abreast of reality and of the people, in peace and war-time alike. Soviet authors have written many a fine book about the Civil War and its heroes. Among those books are *How The Steel Was Tempered* by N. Ostrovsky, *The Iron Flood* by A. Serafimovich, *The Rout* by A. Fadeyev, *Armoured Train 14-69* by V. Ivanov, *First Mounted Army* and *Optimistic Tragedy* by V. Vishnevsky, *Chapayev* by D. Furmanov, *Lyubov Yarovaya* by K. Trenev, *School* by Arkady Gaidar, *Early Joys* and *No Ordinary Summer* by Konstantin Fedin and dozens more.

Soviet authors succeeded in showing the difficult remoulding of people in revolutionary battles and in everyday work, and in revealing the reasons for the vacillations of a section of the intelligentsia and the contradictions in the psychology of certain sections of the peasantry. These problems are dealt with in the epics *And Quiet Flows the Don* by M. Sholokhov and *Ordeal* by A. Tolstoi, the novels *Skutarevsky* by Leonid Leonov and *A Road to Life* by A. Makarenko, the poem *The Land of Muravia* by A. Tvardovsky and other works.

To participate in the life of the people, Soviet writers went to building sites, out-of-the-way corners stirring to life, factories, towns and villages, and wherever else the people were busy reshaping their country. Soviet reality and the great transformations occurring in it are depicted with deep insight in the novel *Set* by L. Leonov, who wrote it after he had watched with his own eyes the firstlings of Soviet industry going up. Observations made on building sites and collective farms went into the making of *Hydrocentral* by M. Shaginyan, *Forward, Timel* by V. Katayev, *Kara-Bugaz* by K. Paustovsky, *Out of Chaos* by I. Ehrenburg, *The Soil Redeemed* by F. Panferov, *Virgin Soil Upturned* by M. Sholokhov, *Poem About the Axe* by N. Pogodin, *Cement and Energy* by Fyodor Gladkov, books through which literature invaded life with unprecedented vigour.

In peace-time Soviet writers created books that helped the people build socialism, and in the trying years of the Great Patriotic War of 1941-45 they defended it with pen and bayonet. Hundreds of writers became war correspondents. Front-line newspapers and newspapers appearing in the capital carried fiery articles by Alexei Tolstoi and Ilya Ehrenburg, Vasily Grossman and Leonid Leonov, Vsevolod Vishnevsky and Boris Gorbатов, Nikolai Tikhonov and Alexander Korneichuk, Mykola Bazhan and Alexander Dovzhenko.

In the autumn of 1941, a radio "Message" by Jambul was sent to besieged Leningrad. The 95-year-old poet said:

*Leningrad's sons and daughters,
My own children, my pride!
Your Neva's gleaming tide
I see reflected in our waters.*

"We could hardly keep back tears of joyful emotion as we read that message," said Vsevolod Vishnevsky, one of the writers who took part in the defence of Leningrad. "We felt that it was as valuable as a strong reinforcement. And we went into action with redoubled energy."

The war years called forth major literary works of various genres, including the novels *The Unbowed* by Boris Gorbатов, *Days and Nights* by Konstantin Simonov, *The People Immortal* by Vasily Grossman, *The Rainbow* by Wanda Wasilewska and *The Young Guard* by Alexander Fadeyev; the poems *Son* by Pavel Antokolsky, *Zoya* by Margarita Aliger, *Kirov Is With Us* by Nikolai Tikhonov, *Vasily Tyorkin* by Alexander Tvardovsky, *Pulkovo Meridian* by Vera Inber, etc.; the plays *Invasion* by Leonid Leonov, *Russian People* by Konstantin Simonov and *Front* by Alexander Korneichuk.

With the war over, Soviet literature joined the people in tackling workaday tasks of communist development. The country's post-war problems have found expression in numerous books of recent date, such as *The Zhurbins* and *The Yershov Brothers* by Vsevolod Kochetov, *Days of Our Life* by Vera Kellinskaya, *Those Who Seek* and *After the Wedding* by Daniil Granin, *Harvest* and *Battle Along the Road* by Galina Nikolayeva, *In a Collective Farm* and *Hard Spring* by Valentin Ovechkin, in novels and stories by Vera Panova, Victor Nekrasov, Sergei Antonov, Anatoly Kalinin, Yefim Dorosh, Sergei Zalygin, plays by Alexander Stein, Victor Rozov, Anatoly Sofronov, poems by Alexander Tvardovsky, Nikolai Gribachov, Mikhail Lukonin, Leonid Martynov, and many others.

Soviet writers have created vivid portraits of some of the foremost men of our times—builders of a new world, champions of communism, of the immortal ideas of Lenin. Chapayev and Kozhukh, Korchagin and Davydov, Izvekov and Ragozin, Koshevoi and Protzenko, and numerous other characters of Soviet literature embody the strength of the builders of a new world, the strength of the Communist Party. It is with deep love and a keen sense of responsibility that Soviet authors revive the unforgettable image of Lenin, the great leader of the working people, the founder of the Communist Party and the Soviet state. Episodes of Lenin's life are depicted in *Lenin*, a masterly literary portrait by Maxim Gorky, in Vladimir Mayakovsky's epic *Vladimir Ilyich Lenin*, in Stepan Shchipachov's *The Little House in Shushenskoye*, in the plays *Man with a Gun* and *The Kremlin Chimes* by Nikolai Pogodin, *Eternal Source* by Dmitry Zorin.

Soviet writers often draw on both the remote and the recent past of the people. Leaders of the people, revolutionaries, the people as builder and as the maker of history, constitute the cardinal theme of the Soviet historical novel. *Peter I* by Alexei Tolstoi, *Stepan Razin* by Alexander Chapygin, *Stepan Razin* by Stepan Zlobin, *Yemelyan Pugachov* by Vyacheslav Shishkov, *The Defence of Sevastopol* by Sergei Sergeyev-Tsensky, *Pioneers of Freedom* by Olga Forsh, *The Pereyaslavl Assembly* by Nathan Rybak, and numerous other books reveal

the social and ideological import of popular movements. They show in the right perspective the basic trends in the development of society, and portray the characters against a background of social and historical generalizations.

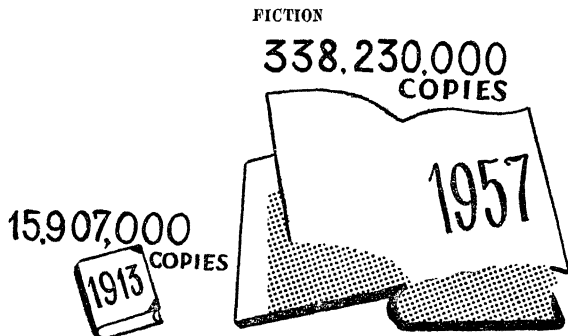
An appreciable number of books by Soviet authors are devoted to the struggle against imperialist wars and to the promotion of the principles of international peace and friendship. They include *The Fall of Paris*, *The Storm* and *The Ninth Wave* by Ilya Ehrenburg, *The Russian Question* by Konstantin Simonov, *Two Streams* by Nikolai Tikhonov, *Peace to the World!* by Alexei Surkov, works by Garegin Sevunts, Mirza Ibrahimov, Andrei Malyshko, Samed Vurgun and many other writers.

At every stage of the history of Soviet society, Soviet literature found both new subjects and new forms of portrayal. Socialist realism provides vast opportunities for creative quest, for the use of an infinite variety of styles, genres and forms, for the development of the literary individuality of each writer.

The immense diversity of Soviet literary styles is exemplified, among others, by the structural complexity and psychological depth of Leonid Leonov's novels and the amazing expressiveness of Samuil Marshak's original and translated poetry, the austere epic character of the writings of Alexei Tolstoi and the impetuously kaleidoscopic quality of those of Ilya Ehrenburg, the revolutionary passion of Vladimir Mayakovsky's poems and the folk-song ring of Mikhail Isakovsky's poetry, the limpid colours of Sergei Antonov's short stories and Vera Panova's tendency to poetize everyday occurrences, Mikhail Prishvin's rich landscapes and the folk-tale style of Pavel Bazhov, the biting satire of Ilya Ilf and Yevgeny Petrov and the pithy laconicism of Leonid Sobolev.

THE WORK OF SOVIET WRITERS BELONGS TO THE PEOPLE

The Soviet reader is fond of books. His attitude to literature is in no way reminiscent of those times long bygone when "the writer scribbled and the reader skimmed," as Mikhail Saltykov-Shchedrin, the celebrated Russian satirist, put it.



With the Soviet people, reading fiction has become a necessity. They regard books as their friends and helpers, as their advisers and preceptors. Every third book published in the Soviet Union in 1957 was a novel, story, or collection of poetry or short stories.

Since the end of the war, publication of fiction has increased more than seven-fold. Compared with 1913, the total edition of books of fiction has increased 21-fold.

Writers	Total of works published in 1917-57 (million copies)
Maxim Gorky	89.2
Alexei Tolstoi	41.3
Vladimir Mayakovsky	33.8
Mikhail Sholokhov	over 26.7
Alexander Fadeyev	15.0
Nikolai Ostrovsky	12.1

A large number of books by Russian authors are translated into numerous languages of the Soviet Union. On the other hand, books by non-Russian authors are translated into Russian and other languages spoken in the U.S.S.R.

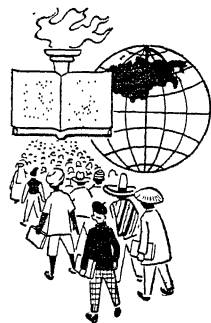
Writers	Number of translations	Writers	Number of translations
Vladimir Mayakovsky . .	59	Jambul	24
Alexei Tolstoi	55	Georgy Gulia	22
Alexander Serafimovich .	43	Hans Leberecht	17
Wanda Wasilewska	28	Sadriddin Aini	17
Emil Kazakevich	28	Mehti Huseinov	16

There are plenty of books for Soviet children as well. They are supplied by more than 100 publishing houses. Many prominent authors, including Arkady Gaidar, Kornei Chukovsky, Sergei Mikhalkov, Samuil Marshak, Boris Zhitkov and Agnia Barto, have devoted their talent to books for children.

Upwards of 50,000 books for children have appeared since the Soviet state was founded. They totalled about 1,800 million copies, exclusive of textbooks. In post-war years books for children have been coming out in 58 languages of the Soviet Union.

Soviet literature has won recognition of the general reader both inside the country and abroad. It exerts a beneficial influence on the spiritual life of the peoples of the world.

Soviet fiction is published abroad every year in tens of millions of copies.



In a message of greetings to the Second Congress of Soviet Writers, Dyson Carter, a Canadian author, stressed the universal importance of Soviet literature in the following terms:

"It seems to me that the cultural essence of recent history can be expressed in the transcendent literary change of this epoch. I mean this change. Soviet literature, once known to so very few beyond your borders, today is familiar to hundreds of millions, over every continent, as the dynamic, flourishing, beloved literature that has inherited and enriched the most precious traditions cherished by foremost thinkers and artists down through the ages.

"May your deliberations guide not only Soviet writers but progressive workers in all the arts in every land, higher and higher towards the summits of humanism, truth and beauty!"

LIGHT FROM THE SCREEN

MOST IMPORTANT OF ARTS

The Soviet cinema, which had no traditions comparable to those of music, the theatre or painting, became in 40 years a multi-national art of and for the people, an art of great ideological and aesthetic force.

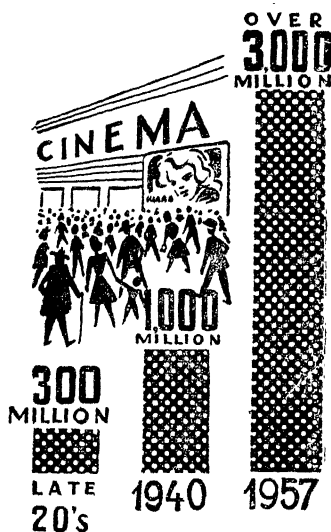
August 27, 1919 is a memorable date in the history of the Soviet cinema. On that day a decree of the Council of People's Commissars, signed by Lenin, transferred the entire cinema industry from private companies, which had been using it as a source of lucre, to the People's Commissariat of Education, thereby making it a means of enlightenment and cultural education of the people. The studios, film distribution offices and cinema theatres were nationalized.

"Of all the arts, the most important for us is the cinema," said Lenin in the early days of the Soviet state, thus specifying the significance and rank of the Soviet cinema as an art.

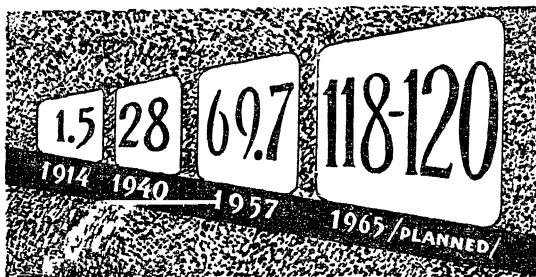
Soviet cinema art took its first steps in the hard years of the Civil War. Newsreels played an important part at that time. They were quick to respond to events in the life of the young Soviet Republic. Cameramen filmed congresses of the Party and the Soviets, the heroic deeds of the Red Army, the first achievements in the peace effort of the people and in technology. They preserved for generations to come the image of the great Lenin, who was filmed by P. Novitsky, P. Yermolov, E. Tisse and G. Giber.

In the twenties producers who had been engaged in the pre-revolutionary cinema — Y. Protazanov, V. Gardin, L. Kuleshov and others — were joined by a group of young cinema workers led by S. Eisenstein, V. Pudovkin, A. Dovzhenko and D. Vertov, to whom the Soviet cinema owes much of its fame.

ANNUAL CINEMA ATTENDANCE



FILM PROJECTING INSTALLATIONS
(thousands)



A CHRONICLE OF STRUGGLE AND LABOUR

The year 1925 saw the release of S. Eisenstein's *The Battleship "Potemkin,"* an outstanding creation of the new, revolutionary cinema. The rising on the battleship *Knyaz Potemkin Tavrich'sky*, an event of the revolution of 1905, was vividly presented in the film as evidence of the invincible might of the revolutionary people. The film made a triumphant round of the Soviet Union and other countries. In 1927 it was awarded a Grand Prize at the Paris World Fair. Charles Chaplin described the film as the best in the world.

Other films which enriched universal cinema art were *Mother* (produced by V. Pudovkin in 1926), *The End of St. Petersburg* (V. Pudovkin, 1927), *October* (S. Eisenstein, 1928), *Genghis Khan's Descendant* (V. Pudovkin, 1929), *Arsenal* (A. Dovzhenko, 1929), *The Earth* (A. Dovzhenko, 1930), *Road to Life* (N. Eck, 1931), *Counter-Plan* (F. Ermler and S. Yutkevich, 1932), etc.

Along with the Russian cinema industry, progress was made by those of the Ukraine, Georgia and Armenia, which at that time produced such noteworthy films as *Night Cabbie* (G. Tasin, 1929), *Two Days* (G. Stabovoi, 1927), *Eliso* (N. Shengelaia, 1928) and *Honour* (A. Bek-Nazarov, 1926).

Documentaries released in those years included *March On, Soviet!* and *One-Sixth of the World* (D. Vertov, 1926), *The Great Way* and *The Fall of the Romanov House* (E. Schub, 1927) and *Turkestan-Siberia Railway* (V. Turin, 1929). They were genuine works of art.

Sound, which came in the early thirties, was a turning point in the history of the Soviet cinema. It was in those years that Alexei Tolstoi, Vsevolod Vishnevsky, Nikolai Pogodin and other noted Soviet writers made contributions to the cinema. The emotional effect of films was set off by music specially composed for the cinema by Dmitry Shostakovich, Sergei Prokofiev, Dmitry Kabalevsky, Isaak Dunayevsky, G. Popov, N. Kryukov and other prominent musicians.

A screen version of Dmitry Furmanov's novel *Chapayev* was made

by S. and G. Vasilyev in 1934. It was a brilliant specimen of socialist realism. The image of the renowned Civil War hero, Chapayev, as impersonated by Boris Babochkin, has become a favourite with Soviet cinemagoers.

Chapayev was followed by a series of other films reproducing revolutionary history. Among them were the trilogy *The Young Maxim*, *The Return of Maxim* and *The Vyborg District* (G. Kozintsev and L. Trauberg, 1935-39), *We Are From Kronstadt* (Y. Dzigan, 1936), *Baltic Deputy* (A. Zarkhi and I. Kheifits, 1937), *Shchors* (A. Dovzhenko, 1939), *Zangezur* (A. Bek-Nazarov, 1937) and *Yakov Sverdlov* (S. Yutkevich, 1940).

Lenin in October and *Lenin in 1918*, two films made by M. Romm on a script by A. Kapler in 1937-39, and *Man With a Gun* (1938, produced by S. Yutkevich, script by N. Pogodin) convey the great Lenin's image—an image so dear to all working people—superbly rendered by B. Shchukin and M. Shtraukh.

Films produced in the latter half of the thirties and the early forties were distinguished by considerable variety of themes, genres and styles.

Among them were such historical dramas or epics as *Peter I* (V. Petrov, 1937-39; in two series), *Alexander Nevsky* (S. Eisenstein, 1938), *Bogdan Khmel'nitsky* (I. Savchenko, 1941) and *Suvorov* (V. Pudovkin, 1940);



A still from *The Fate of A Man*

films giving vivid portrayals of Soviet builders of socialism: *Great Citizen* (F. Ermler, 1938-39; in two series), *Member of the Government* (A. Zarkhi and I. Kheifits, 1939), *A Schoolmaster* (S. Gerasimov, 1939), etc.;

merry comedies on topics of the day: *The Rich Bride* (1938), *Tractor-Drivers* (1939) and *The Pig-Tender and the Shepherd* (1941), produced by I. Piryev; *Jolly Fellows* (1934), *Volga, My Volga* (1938) and *Bright Road* (1940) by G. Alexandrov;

screen versions of classics: the trilogy *The Childhood of Gorky*, *My Apprenticeship* and *My Universities* (after Maxim Gorky's stories, produced by M. Donskoi in 1937-39), etc.;

documentaries and popular-science films: *Three Songs About Lenin* (D. Vertov, 1934), *Spain* (R. Carmen and B. Makaseyev, cameramen; E. Schub, producer; 1939), *The Pushkin Manuscripts* (1937), *In the Depth of the Sea* (A. Zguridi, 1938), etc.

Colour films, in particular a large number of colour cartoons, were made too. Three-dimension films were first produced in 1941, by a method invented by S. Ivanov.

During the war of 1941-45 the Soviet motion-picture industry concentrated on the war effort of the people. While the studios were evacuated to the east, a group of courageous cameramen went to the front in the west, as their predecessors had done during the Civil War. Thanks to their fearless effort, a film chronicle of the war was created, recording for mankind the battle exploits of the Soviet people.

As many as 489 newsreels, 67 shorts- and 34 full-length films were made during the war years.

They included the feature films *Mashenka* (Y. Raizman, 1942), *He Will Come Back* (I. Piryev, 1942), *She Fought for Her Country* (F. Ermler, 1943), *The Rainbow* (M. Donskoi, 1944), *Zoya* (L. Arnshtam, 1944) and *Invasion* (A. Room, 1944);

the documentaries *German Defeat Near Moscow* (I. Kopalin and L. Varlamov, 1942), *Fighting Leningrad* (R. Carmen, 1942), *Stalingrad* (L. Varlamov, 1943), *One Day of War* (M. Slutsky, 1942), *Fighting for Our Soviet Ukraine* (A. Dovzhenko and Y. Solntseva, 1943), *Liberated France* (S. Yutkevich, 1944) and *Berlin* (Y. Raizman, 1945).

The early post-war years were marked by many new films worthy of note, such as *Village Teacher* (M. Donskoi, 1947), *The Young Guard* (S. Gerasimov, 1948; in two series), *Mussorgsky* (G. Roshal, 1950), *Taras Shevchenko* (I. Savchenko, 1951), etc.

Film studios were set up in Latvia, Lithuania and Estonia

The number of films made in 1957 was 15 times as great as in 1951. High-standard feature films have been produced in recent years. They are *A Big Family* (I. Kheifits, 1955), *Othello* (S. Yutkevich, 1955), *The Grasshopper* (S. Samsonov, 1955), *The Rumyantsev Case* (I. Kheifits, 1956), *Alien Kin* (M. Schweizer, 1956), *The Forty-First* (G. Chukhrai, 1956), *Spring Comes to Zarechnaya Street* (F. Mironer and M. Khutsiyev, 1956), *The Cranes Are Flying* (M. Kalatozov, 1957), *The House I Live In* (L. Kulijanov and Y. Segel, 1957), and *The Fate of a Man* (S. Bondarchuk, 1959).

The first stereophonic wide-screen films were made in 1955.

In 1957 and 1958, Soviet cinema workers produced excellent screen versions of some Russian and Soviet classics. The three series of *And Quiet Flows the Don*, based on Sholokhov's novel (produced by S. Gerasimov), the trilogy based on Alexei Tolstoi's novel *Ordeal*—the wide-screen films *Sisters*, 1918 and *Dreary Morning* (produced by G. Roshal)—and the filming of Dostoyevsky's *Idiot* by I. Piryev are indications of the inexhaustible artistic potentialities of the Soviet cinema.

The splendid documentaries *Lenin Lived Here* (producer S. Bubrik), *The Great Turning Point* (S. Gurov) and *Unforgettable Years* (I. Kopalin) bring back to life major events in Soviet history. The popular-science films *Road to the Stars*, *The First Soviet Man-Made Earth Satellites* and *Return to Life* are descriptive of outstanding achievements in Soviet science.

A high standard of producing, acting and filming is displayed by the feature films *Communist* (produced by Y. Raizman), *Stories About Lenin* (S. Yutkevich) and *Don Quixote* (panoramic screen version of Cervantes' novel by G. Kozintsev).

The first Soviet panoramic cinema theatre was opened in Moscow in 1958.

The work of the Soviet Union's non-Russian studios, which in recent years have produced many fine films, is worthy of special mention. At present they account for 60 per cent of the films made in the Soviet Union.

In 1957 there were 33 studios in the U.S.S.R., including the Mosfilm and Gorky studios (Moscow), Lenfilm (Leningrad), the Dovzhenko Studio (Kiev), Gruzia-Film (Tbilisi), Armen-Film (Yerevan), the Tashkent, Riga and other studios.

Problems of cinema art are dealt with in the periodicals *Iskusstvo kino*, *Sovetsky ekran* and *Tekhnika kino i televidenia*.

In 1957 Soviet cinema workers formed a union of their own.

MASTERS OF THE SOVIET SCREEN

The principles of the Soviet school of film production were established by the work of S. Eisenstein, V. Pudovkin and A. Dovzhenko. Film producers of the older generation now active in the industry are G. Alexandrov, L. Arnshtam, S. Gerasimov, A. Zarkhi, M. Kalatozov, G. Kozintsev, I. Piryev, Y. Raizman, M. Romm, A. Room, I. Kheifits, S. Yutkevich; producers of documentaries R. Carmen and I. Kopalin, A. Zguridi who makes popular-science films, and others. A successful début has been made by the young producers A. Alov, V. Naumov, L. Kulijanov, Y. Segel, E. Ryazanov, S. Rostotsky, S. Samsonov, L. Faiziyev, G. Chukhrai, R. Chkheidze, F. Mironer and M. Khutsiyev. The list of gifted scenario-writers includes Y. Vinogradskaya, Y. Gabrilovich, A. Kapler, M. Papava, M. Smirnova and others.

Among the outstanding film actors, many of whom also perform on the stage, are Vera Anjaparidze, Boris Babochkin, Gavrila Belov, A. Borisov, Amvrosy Buchma, Nikolai Bogolyubov, Sergei Bondarchuk, Ada

Voitsik, Mikhail Zharov, Olga Zhizneva, Oleg Zhakov, Igor Ilyinsky, Nikolai Kryuchkov, Maria Ladynina, Sergei Lukyanov, Vera Maretskaya, Nikolai Mordvinov, Tamara Makarova, Vasily Merkuriev, Lyubov Orlova, Nikolai Okhlopkov, Nikolai Simonov, Grigory Stolyarov, Valentina Serova, Natalia Uzhviy, Zoya Fyodorova, Lyudmila Tselikovskaya, Nikolai Cherkasov, Boris Chirkov and numerous others. The younger generation of actors is represented by Izolda Izvitskaya, Elina Bystritskaya, Alla Larionova, Inna Makarova, Nonna Mordyukova, Rufina Nifontova, Tatyana Samoilova, Oleg Strizhenov, Alexei Batalov, Nikolai Rybnikov, Sergei Yakovlev, Yury Yakovlev and other talented performers. Master cameramen are A. Golovnya, E. Tisse, A. Moskvina, S. Urusevsky, L. Kosmatov, V. Rappoport, B. Volchek, Y. Andikanis and A. Shelenkov.

INTERNATIONAL CONTACTS

The Soviet cinema gained world-wide fame as early as the twenties, when *The Battleship "Potemkin"* made the round of the globe. *Potemkin* was followed by scores of other high-standard Soviet films. At the First International Film Festival held in Venice in 1932, the Soviet cinema successfully presented *Road to Life*. Ever since then, the Soviet Union has participated in world festivals—in Cannes, Venice and Karlovy Vary, many of its productions winning prizes.

In 1957 alone, prizes were awarded to 19 Soviet films.

At the 1958 World Festival in Cannes, *The Cranes Are Flying* (producer M. Kalatozov, cameraman S. Urusevsky) won a grand prize, the Golden Palm Branch.

In August 1959, an International Film Festival was held in Moscow under the slogan "For Humanism in Cinema Art, for Peace and Friendship Among Nations." The participants it drew from 50 countries showed over 200 feature, documentary and popular-science films, of which 88 were entered for the competition.

The Festival's "Grand Gold Prize" for the best full-length feature film went to *The Fate of a Man*, a creation of the Soviet producer Sergei Bondarchuk.

In recent years Chinese, Indian, Polish, Yugoslav, French and Italian film weeks have been held in the Soviet Union. Soviet cinema workers make films in collaboration with their colleagues from the People's Democracies and other foreign countries. The documentary *The Light of October* (1957) was produced jointly by cinema workers from all the socialist countries. The wide-screen colour film *Wanderings Beyond Three Seas* (in two series) was made in collaboration with Indians. At present 50 films are being produced jointly with the cinema workers of various foreign countries.

THEATRE OF THE REVOLUTION

WITH THE PEOPLE

The October Revolution ushered in a new era in the development of the Russian and world theatre. A new theatre, whose mission was to educate the working people and help them in building a communist society, was in the making.

On November 9 (22 N.S.), 1917 the Council of People's Commissars placed the theatres under the jurisdiction of the State Commission for Education (afterwards reorganized into the People's Commissariat of Education). On August 26, 1919 Lenin signed a decree "On the Unification of Theatrical Art," which made the theatre state property.

The theatre became an art for the masses, and drew millions of new spectators—workers and peasants. According to Konstantin Stanislavsky, the new audiences "proved eager, receptive and ingenuous, quick to respond to the play."

Here is what the producer G. Kryzhitsky says about Lope de Vega's *Fuente Ovejuna*, staged in Kiev on May 1, 1919:

"I remember the hall filled to capacity with Red Army men. It was fantastic—that storm, that extraordinary enthusiasm, that din of applause and shouts. After Laurencia's famous monologue the audience rose and sang *The Internationale*. The play ran for forty-two days on end, and forty-two times the same thing happened: the Spanish girl's monologue, followed by deafening applause and then by *The Internationale*."

At every stage of Soviet history, the theatre kept pace with the people.

In 1919 there were over 1,000 theatre and some 1,500 musical groups and choirs in the Red Army.

"What made the divisional theatre group so popular among the soldiers was the awareness that those in the group were their own comrades who were always there with them, and ready to join them in attacking the enemy if need be," wrote D. Furmanov.

During the early five-year plan periods new theatres sprang up in Magnitogorsk, Berezniki, Komsomolsk-on-Amur, Stalinsk and other new industrial centres.

Collective- and state-farm theatres came into being in the renovated countryside. In 1941 their number exceeded 300. Equipped with simple settings, rural theatre groups toured the country, conveying the ideas of a new, socialist art to millions of peasants.

Thousands of new plays were staged during the war of 1941-45. The 3,800 theatre teams which went to various fronts gave more than 400,000 plays and concerts involving 40,000 performers.

In the diary of the front-line branch of the Kostroma Drama Theatre, we read the following entry: "We were giving *Truth Is Good, But Happiness Is Better* while guns and mortars kept up a steady fire. Our aircraft passed overhead every now and again, and drew the fire of enemy AA guns. Occasionally we had to pause and wait till those unasked-for sound effects were over."

The front-line theatres set up during the war included the propaganda platoon of the Leningrad Red Army House, front-line branches of the Moscow Vakhtangov and Maly theatres, Leningrad Pushkin Theatre, theatres of the All-Russian Theatrical Society, etc.

The rapid numerical growth of the Soviet theatres was due to the interest millions of people took in stage art.

In 1957 the Soviet Union had—



drama theatres,



opera and ballet theatres,



musical comedy theatres,



children's theatres,



puppet theatres.

There are 34 theatres functioning in Moscow, including the Bolshoi, Maly, Art, Vakhtangov (established in 1926 on the basis of the Vakhtangov Studio), Mayakovsky (established in 1922 under the name of the Revolution Theatre), Mossoviet Drama (established in 1923) and Central Children's theatre (the latter was established in 1936).

Leningrad has 18 theatres, including the Pushkin and Bolshoi (Greater) drama theatres (the latter was founded in 1919).



Bolshoi Theatre

Under the Soviet system, professional theatres were set up by peoples that before the Revolution had no stage art whatever.

Dozens of non-Russian theatres sprang up in the early years of Soviet rule.

1920

Franko Theatre in Vinnitsa (later transferred to Kiev), Tatar Drama Theatre in Kazan, First Byelorussian Drama Theatre in Minsk (since 1944 it has borne the name of Yanka Kupala), Azerbaijan Drama Theatre in Baku (named after Azizbekov in 1933), Kharkov Theatre for Children and Territorial Model Drama Company, transformed into the Hamza Theatre in 1929 (Tashkent).

1921

Armenian Drama Theatre in Yerevan (named after Sundukyan in 1937) and Shot'ha Rust'haveli Georgian Theatre in Tbilisi.

NUMBER OF THEATRES

1913

1957



THEATRES



PRODUCTIONS



THOUSAND PERFORMANCES



77 MILLION SPECTATORS

1922

Zankovetska Ukrainian Theatre in Kiev, and Berezil Theatre in Kiev (Kharkov Ukrainian Drama Theatre since 1926).

Today the theatres of the Soviet Union stage plays in more than 40 languages spoken in the country. Every Union and Autonomous republic now has a drama theatre using the local language as well as Russian.

NEW REPERTOIRE

The foremost workers of the Soviet stage have always been intent on creating a genuinely people's theatre that would mirror and elevate the revolutionary spirit of the masses.

The first Soviet play, V. Mayakovsky's *Mystery-Bouffe*, was produced on the first anniversary of the October Revolution. The author described it as "a heroic, epic and satirical picture of our times" showing "the path of the Revolution." In the early post-revolutionary years dramatized festivals were held in streets and squares, dozens of theatre companies and large numbers of ordinary people taking part in them. In Petrograd were shown *A Drama About the Third International* (May 1, 1919), *The Fall of the Commune* (March 18, 1920), etc.; in Moscow, *A Pantomime of the Great Revolution* (November 7, 1918); in Irkutsk, *The Struggle Between Labour and Capital* (May 1, 1921). The theatres drew on revolutionary history for themes; they staged *Oliver Cromwell* by A. Lunacharsky (1921) and *Zagmuk* by A. Glebov (Maly Theatre, 1925), *The Pugachov Rising* by K. Trenev (Art Theatre, 1925) and so on.

The Party's call for a deeper and more diversified representation of contemporary reality in art gave rise to the Soviet heroic drama. Theatres produced *Storm* by V. Bil-Belotserkovsky (M.G.S.P.S. Theatre, 1925), *Lyubov Yarovaya* by K. Trenev (Maly Theatre, 1926), *Armoured Train 14-69* by V. Ivanov (Art Theatre, 1927), *Virineya* by L. Seifullina, *Badgers* by L. Leonov, *The Break-Up* by B. Lavrenev (Vakhtangov Theatre, 1926-27). In the thirties the traditions of the Soviet heroic drama were carried on in the plays *First Mounted Army* (Revolution Theatre, 1930), *Optimistic Tragedy* by V. Vishnevsky (Chamber Theatre, 1933) and *The Doom of the Squadron* by A. Korneichuk (Red Army Theatre, 1934).

In the five-year plan periods, the main themes of the stage were the development of a new society, the labour effort of the Soviet people and the socialist transformation of the countryside. They were dealt with in *Tempo* (Vakhtangov Theatre, 1930), *Poem of the Axe*, *My Friend*, *After the Ball* by N. Pogodin (Revolution Theatre, 1931-34), *Fury* by Y. Yanovsky



(Pushkin Drama Theatre, Leningrad, 1930), *Honour and Love* by K. Yashen (Hamza Uzbek Theatre, 1936), *Grain* by V. Kirshon (Art Theatre, 1937), etc.

Maxim Gorky's *Yegor Bulychov and the Others*, *Enemies*, *Summer Vacationists*, *Barbarians* and other plays, produced in the thirties, were outstanding specimens of socialist realism. They are still running in numerous Soviet theatres.

The heroic traits of builders of socialism were rendered in *Fear* by A. Afinogenov (Pushkin Theatre, Leningrad), *Platon Krechet* by A. Korneichuk (Art Theatre, 1935), *Glory* by V. Gusev (Maly Theatre, 1936), *In the Steppes of the Ukraine* by A. Korneichuk (Franko Theatre, 1940), *A Fellow From Our Town* by K. Simonov (Lenin Komsomol Theatre, 1941), etc.

In *Man with a Gun* by N. Pogodin, *On the Banks of the Neva* by K. Trennev and *Truth* by A. Korneichuk, the role of the leader of the Revolution, Lenin, was interpreted by B. Shchukin, M. Straukh, K. Skorobogatov, A. Kramov and other actors. It was a great achievement of the Soviet theatre.

During the war of 1941-45, when the Soviet people were engaged in an all-out effort, the theatres produced plays full of fiery patriotism, such as *Russian People* by K. Simonov, *Invasion* by L. Leonov, *Front* by A. Korneichuk, *Honour Guards* by M. Auezov and A. Abishev, etc.

The life and struggle of Soviet patriots were represented in *The Great Force* by B. Romashov (Maly Theatre, 1947), *The Law of Honour* by A. Stein (Mayakovsky Theatre, 1948), *For Those at Sea* by B. Lavrenev (Maly Theatre, 1947), *Makar Dubrava* by A. Korneichuk (Franko Theatre, 1948) and other plays. K. Simonov's *The Russian Question* and B. Lavrenev's *The Voice of America*, two plays telling the truth about the capitalist world, were staged throughout the Soviet Union.

Along with modern plays, Soviet theatres produced outstanding classics.

What Y. Turchaninova, one of the oldest Maly Theatre actresses, said about the plays of Alexander Ostrovsky is applicable to all the better creations of that theatre. "He (Ostrovsky—Ed.) has now grown younger," she said, "and displays new, unprecedented colours, unnoticed by the audiences of the past. The new spectator has restored Ostrovsky to his youth."

In tsarist Russia, Ostrovsky's plays were not shown more than 500 times a year. In 1940 the professional theatres in the Russian Federation showed them 10,415 times. Plays by Shakespeare, Schiller, Molière, Goldoni, Gogol, Pushkin and Chekhov are running in 27 languages spoken in the Soviet Union.



Plays treating of modern themes have been added to the Soviet theatres' repertoire in late years. *The Golden Carriage* by L. Leonov, *Remote Boundless Expanses* by N. Virta, *Good Luck* by V. Rozov, *Case History* by A. Stein, *What Made the Stars Smile* by A. Korneichuk and numerous other plays tell about the Soviet people's effort to consolidate the new, socialist society.

The new plays show a considerable variety of genres. They include dramas, such as *City at Dawn* by A. Arbuzov, *Stronghold on the River* by S. Smirnov, *Hotel Astoria* by A. Stein or *The Gardener and the Shadow* by L. Leonov, the comedies *When the Acacias Blossom* by N. Vinnikov, *The Shadow* and *The Story of a Young Couple* by Y. Schwarz, *The Six Beloved* by A. Arbuzov, and the comic sketches *Stall No. 16* by D. Ugryumov and *Sombrero* by S. Mikhalkov. Plays devoted to the October Revolution and the early years of the Soviet state are prominent in the repertoire. Among them are *Big Kirill* by I. Selvinsky, *The Eternal Source* by D. Zorin, *Stormy Year* by A. Kapler, *The Guiding Star* by K. Yashen, *Under the Same Roof* by G. Boryan, *The Decisive Step* by B. Kerbabayev and *Thinking of Britanka* by Y. Yanovsky.

Mayakovsky's plays—*The Bedbug* and *Bathhouse*—have been revived in new, forceful productions. Among the classics playing today are *Power of Darkness* by L. Tolstoi, *Stepanchikovo Village and Idiot* after F. Dostoyevsky, Shakespeare's *Anthony and Cleopatra* and *Hamlet*, *I Played and Danced* by J. Rainis, etc.

Soviet theatre-goers acclaimed modern foreign plays such as *Filumena Marturano* and *My Family* by Eduardo de Filippo (Italy), *The Bartered Lullaby* by Halldor Laxness (Iceland), *Last Stop* by Erich Maria Remarque (Germany), *Stone Nest* by Hella Vuolijoki (Finland), *The Makropoulos Elixir* by Karel Capek (Czechoslovakia), *The Nameless Star* by M. Sebastian (Rumania), *Trees Die Standing Up* by Alejandro Casona (Spain), *The Fox and the Grapes* by Guilhermo Figueiredo (Brazil) and many more.

TEN-DAY SHOWS, REVIEWS, FESTIVALS

The Soviet theatre today is a great art created by the joint effort of all the peoples of the Soviet Union. The traditional all-Union and republican art reviews furnish evidence of the tremendous progress made by the various peoples of the country.

In 1930 an All-Union Contest of Non-Russian Theatres was held, attracting 17 theatre companies of various peoples of the U.S.S.R. Ever since the mid-thirties, ten-day shows of non-Russian art have been held. The Ukraine and Kazakhstan demonstrated their achievements in 1936, Uzbekistan and Georgia in 1937, Azerbaijan in 1938, Armenia and Kirghizia in 1939, Byelorussia and Buryat-Mongolia in 1940 and Tajikistan in 1941. After the war, ten-day reviews of art and literature were given by the Byelorussians, Bashkirs, Turkmens and Letts (1955), Armenians and Estonians (1956), Tajiks, Tatars, Kabardinians and Balkarians (1957), Georgians, Kirghiz and Kazakhs (1958), Uzbeks and Azerbaijanians (1959).

Latvia, Lithuania and Estonia showed their best plays at the first Baltic Theatrical Spring held in Riga in 1956. Similar festivals were held in Transcaucasia, Central Asia, the Volga Region and the Urals in 1957.

MASTERS OF THE SOVIET STAGE

Stage workers—actors, producers and artists—are held in high esteem in the Soviet Union. In 1920 the title of People's Artist of the Republic was established. Among the first to receive it were Maria Yermolova, Vladimir Davydov, Alexander Yuzhin, Leonid Sobinov and others.

In 1936, the title of People's Artist of the U.S.S.R. was conferred on a group of outstanding art workers: Maria Blumental-Tamari-na, Boris Shchukin, Antonina Nezhdanova, Konstantin Stanislavsky, Vladimir Nemirovich-Danchenko, Vasily Kachalov, Ivan Moskvina, Yekaterina Korchagina-Alexandrovskaya (R.S.F.S.R.), Maria Litvinenko-Wohlgemuth and Panas Saksagansky (Ukraine), Akaky Khorava and Akaky Vasadze (Georgia) and Kulash Baiseitova (Kazakhstan).

About 2,000 masters of the Soviet stage have been awarded the title of People's Artist of the Republic and over 200, that of People's Artist of the U.S.S.R.

The work of the foremost representatives of the Soviet theatre has been commended more than once by the awarding of Lenin and Stalin prizes and of decorations. Vast popularity attaches to Olga Androvskaya, Mikhail Astangov, Vera Anjaparidze, Maria Babanova, Ivan Bersenev, Lilita Bērziņš, Amvrosy Buchma, Vagarsh Vagharshyan, Vasily Vanin, Sofia Giatsintova, Gleb Glebov, Vakhtang Godziashvili, Boris Dobronravov, Marzia Davudova, Alexander Diky, S. Zakariadze, Konstantin Zubov, Mikhail Zharov, Igor Ilyinsky, Sarah Ishanturayeva, Olga Knipper-Chekhova, A. Kramov, M. Kasimov, Aman Kulmamedov, Leonid Leonidov, K. Lānts, Vera Martsetskaya, Pavel Molchanov, Hrachya Nersesyan, Alexander Ostuzhev, Vahram Papazyan, Vera Pashennaya, M. Romanov, V. Ryzhova, Lev Sverdlin, Prov Sadovsky, Ruben Simonov, Nikolai Simonov, Konstantin Skorobogatov, Alla Tarasova, Mikhail Tarkhanov, Y. Tolubeyev, Vladimir Toporkov, Yevdokia Turchaninova, Natalia Uzhviy, Nikolai Khmelyov, Mikhail Tsaryov, Nikolai Cherkasov, Maxim Shtraukh, Boris Shchukin, Yury Yuryev, Hnat Yura, Alexandra Yablochkina, Mikhail Yanshin and others.

The high cultural standard of the Soviet Union's theatres, the subordination of all components of stage art to a single purpose and the ability fully to convey the message of each dramatic work are indicative of the achievements made in the art of producing.

The progress of the Soviet theatre, an emotionally truthful art, is largely a result of the work of two eminent producers, K. Stanislavsky and V. Nemirovich-Danchenko. The system elaborated by Stanislavsky, whom Maxim Gorky described as "a great reformer of theatrical art," helps the actor to penetrate deeply into the social content of the character he is impersonating, and to attain psychological sub-

tlety and perfect craftsmanship. It underlies the creative activity of our theatres, where it contributes to the establishment of socialist realism.

The Soviet theatre is indebted for much of its progress to the producers Yevgeny Vakhtangov, Yury Zavadsky, Mikhail Kedrov, Vsevolod Meyerhold, K. Marjanov, Sergei Obraztsov, Nikolai Okhlopkov, A. Popov, V. Stanitsin, and Alexander Tairov, as well as to A. Burjalyan and V. Ajemyan (Armenia), A. Lauters, E. Smilgis and B. Dauguvietis (Baltic), M. Krushelnitsky (Ukraine) and numerous others.

INTERNATIONAL CONTACTS

The Soviet theatre earned universal recognition in the early post-revolutionary years. The Moscow Art Theatre company made highly successful guest tours of many European countries and America between 1922 and 1924. At the Paris World Fair in 1925, the Chamber Theatre (producer A. Tairov) and the Meyerhold Theatre were awarded Grand Prizes.

In recent years, the Soviet theatre has considerably expanded its international contacts. From 1956 to 1958, guest performances were given by the Moscow Art, Maly, Mayakovsky, Vakhtangov, Pushkin Leningrad, Franko and Kupala theatres in Yugoslavia, Czechoslovakia, Bulgaria, Hungary, Rumania, Poland, the German Democratic Republic, Britain, France and other countries.

Commenting on the guest performances of the Moscow Art Theatre in Britain, W. Lindsay of the *Manchester Guardian* wrote that the Art Theatre had provided fresh evidence that the desire for the truth is inherent in the genuine theatre. The actors' performance, he added, had overcome the language barrier.

Many foreign theatres reciprocated by performing in the Soviet Union in recent years. They included Comédie-Francaise (1954), Théâtre National du Peuple (1956), the English Tennent Company under the direction of Peter Brook (1955), the Polish National Theatre (1955), Yugoslav Drama Theatre (1956), Berliner Ensemble (1957), Czechoslovak D-34 theatre (1958), Grand-Opéra, etc.

OPTIMISTIC MUSIC

Soviet music, which draws on the best traditions of Russian classical music, belongs to and serves the people. It not only affords aesthetic enjoyment, but also expresses lofty aspirations, rallies the people working for peace and happiness, sings free labour for the benefit of the country, conveys noble ideas and sentiments, calls for heroic effort.

SONGS HELP US LIVE AND BUILD

Song, the most popular musical genre, is now a powerful means of rousing the masses, a "weapon and banner" in the hands of the fighting people. It inspired Soviet people for unprecedented feats during the Civil War and the five-year plan periods, in the grim years of the Nazi invasion and at the time of country-wide patriotic movements.

Those who fought the tsarist autocracy went into action singing revolutionary songs. We are reminded of the stormy events of those years by favourite songs of the day, such as "Forward, Comrades," "Varsovienne," "The Red Banner" or "We're Forging Happiness." But "The Internationale" was the most popular, of course.

There is a whole generation of Soviet people who cherish songs such as "Song of the Commune," "From Siberian Forests to British Seas," "Amid the Bursting of Grenades," "Beyond the River," "Our Locomotive," etc.

In 1920 Dmitry Pokrass, then a private in the First Mounted Army, composed "Budyonny March," which initiated professional song composing. The pre-war years brought fame to A. Alexandrov (his name is associated with the popular Song and Dance Company of the Soviet Army), V. Zakharov, I. Dunayevsky, the Pokrass brothers, M. Blanter and A. Novikov, who composed songs of a distinctive character. The better of I. Dunayevsky's songs, which rang in the films *Jolly Fellows*, *Circus*, *Volga*, *My Volga*, and *Bright Road*, became most popular.

A new group of gifted song composers came to the fore during the last war. They were V. Solovyov-Sedoi ("Tomorrow We Sail," "Play, My Accordion," etc.), V. Makarov ("Ballad of Five Seamen," "Black Sea Sailors, How Are Things?" etc.), B. Mokrousov ("The Sacred Stone," "Fine Are the Spring Flowers," etc.) and S. Kats.

The songs "In Battle for the Motherland" by Z. Kompaneyets and "The Sacred War" by A. Alexandrov (lyrics by V. Lebedev-Kumach) inspired Soviet soldiers fighting the enemy.

The first two lines of "The Sacred War" ran:

*Arise, immense and powerful,
Arise to win or die.*

V. Bely's "Song of the Courageous" (lyrics by Alexei Surkov) was a hymn to courage. Its refrain said:

*The brave are shunned by bullets,
From bayonet thrusts they're safe.*

After the war, popular Soviet songs kept abreast of life, echoing the momentous changes that had occurred in recent years. They played a notable part in the peace movement by exposing the war-mongers. A. Novikov, S. Tulikov and V. Muradeli created admirable songs of the peoples' struggle for peace.

A. Novikov's "March of Democratic Youth" (lyrics by Lev Oshanin) was first sung at the First World Youth Festival in Prague in 1947.

*Every country and nation
Stirs with youth's inspiration,
Young folks are singing,
Happiness bringing
Friendship to all the world.*

DRAWING ON CLASSICAL AND FOLK MUSIC

There was a time when monumental genres of music—symphony, oratorio, opera and ballet—were believed to be something beyond the grasp of the people, something for the "select" few.

In the Soviet Union where the composers borrow big, optimistic themes from socialist reality, music has become near and dear to the people.



Soviet composers' achievements in symphony, opera and chamber music, as well as in other genres are infused with the spirit of innovation. The works of Reinhold Glière, Dmitry Kabalevsky, Nikolai Myaskovsky, Sergei Prokofiev, Aram Khachaturyan, Tikhon Khren-

nikov, Yury Shaporin, Dmitry Shostakovich and some other composers are well known in the Soviet Union and many foreign countries.

R. Glière was one of the first Russian composers of the older generation to take part in creating a Soviet musical culture. Besides the ballets *Red Flower* and *The Bronze Horseman*, his operas composed for non-Russian musical theatres and based on folk melodies of the East are well worthy of note. Among the latter are the Azerbaijan opera *Shahsnam*, the Uzbek operas *Leili and Mejnun*, *Gülsara*, etc.

Sergei Prokofiev's works hold a place of honour in Soviet music. The best of them, composed in Soviet times, include the ballets *Romeo and Juliet*, *Cinderella* and *Stone Flower*, the opera *War and Peace*, the cantata "Alexander Nevsky," the Fifth Symphony and the oratorio "On Guard of Peace." His Seventh Symphony won him a Lenin Prize.

Nikolai Myaskovsky, outstanding symphony composer, created 24 of his 27 symphonies in Soviet years. His crowning work was the Twenty-Seventh Symphony.

Yuri Shaporin's better creations bespeak a close connection with the traditions of Russian classical music. The most noteworthy of his works are the opera *Decembrists*, the symphony-cantata "On the Field of Kulikovo" and songs using lyrics by Pushkin, Tyutchev and Blok.

The composers and teachers M. Ippolitov-Ivanov, S. Vasilenko, M. Gnesin and B. Asafyev, prominent music scholar and composer, had an appreciable share in the education of a new generation of composers.

Among the gifted composers who attained to maturity in the Soviet period, Dmitry Shostakovich holds a special place. His best compositions—the First, Fifth and Seventh ("Leningrad") symphonies and the oratorio "Song of the Woods"—are familiar to many. His Eleventh Symphony—on the Russian revolution of 1905—earned him a Lenin Prize in 1958.

Aram Khachaturyan's piano, violin and cello concertos, his music in the ballets *Gayaneh* and *Spartacus*, and his First and Second symphonies are distinguished by rich colours, a forceful temperament and fresh national idiom.

Dmitry Kabalevsky is a versatile musician. He has composed the operas *Colas Breugnon*, *The Taras Family* and *Nikita Vershinin*, four symphonies, concertos, quartets and the operetta *Singing Spring*.

I. Dzerzhinsky completed his first opera *And Quiet Flows the Don* in 1935. It brought a new element—revolutionary song—into opera art. Tikhon Khrennikov, too, drew on contemporary song melodies in composing his operas *The Storm*, *Frol Skobeyev* and *Mother*.

G. Sviridov displayed unusual talent in his vocal compositions, the musical poem "To the Memory of Sergei Yesenin" and beautiful songs based on lyrics by Robert Burns and Avetik Isahakyan.

Contributions to Soviet music were also made by V. Shebalin, L. Knipper, G. Popov, M. Koval, N. Peiko, N. Rakov and other prominent composers.

The non-Russian republics of the Soviet Union have their own noted composers of symphonic, chamber and opera music. In the Ukraine, they are L. Revutsky (composer of a number of symphonies and choral works), B. Lyatoshinsky (operas *The Golden Hoop* and

Shchors, "Ukrainian Quintet" for piano and strings, music to the film *Taras Shevchenko*), K. Dankevich (the opera *Bogdan Khmel'nitsky*, the ballet *Lileya* and a number of symphonic poems), Y. Meitus (the operas *The Young Guard* and *Dawn Over the Dvina*), P. Maiboroda (the opera *Milana*), A. Shtogarenko (the symphony-cantata "My Own Ukraine," the symphonic suite "To the Memory of Lesya Ukrainka"), A. Filippenko, G. Zhukovsky and others.

The work of U. Hajibekov, author of the opera *Kör Oghlu* and the musical comedy *Arshin Mal Alan*, went a long way towards furthering the music of his native Azerbaijan. K. Karayev gave bold expression to Azerbaijan motifs in his musical poem "Leili and Mejnun" and in his ballets *Seven Beauties* and *Thunder Path*. So did F. Amirov and A. Hajiyev.

The works of Georgia's outstanding composer, Z. Paliashvili, above all his operas *Abesalom and Eteri* and *Daisi*, enjoy great popularity. Other composers prominent in Georgia are Sh. Mshvelidze, author of three symphonies, a number of symphonic poems and the opera *The Legend of Tariel* and A. Balanchivadze, who has composed a symphony, piano concertos and the ballet *The Heart of the Mountains*. Of the younger composers, mention should be made of A. Machavariani, who has composed a violin concerto and the ballet *Othello*, and O. Taktakishvili, author of two symphonies, a piano concerto and the musical poem "Mtsiri."

In Armenia, the two celebrated composers, A. Spendiarov and A. Khachaturyan, were followed by the younger musicians A. Harutyunyan ("Cantata of the Motherland"), A. Babajanyan ("Heroic Ballad" for piano and orchestra, and a vividly dramatic piano trio), A. Babayev (the opera *Artsvaberd*), E. Mirzoyan and A. Hovhannesyan.

The three Baltic republics' better known musicians are Y. Ivanov, a prominent Lettish composer of symphonies, M. Zariņš (the operas *Towards New Shores* and *The Green Mill*), the composer A. Skulte, the Estonian opera composers E. Kapp and G. Ernesaks and the Lithuanian maestros S. Vainiunas, B. Dvarionas, J. Juzeliunas and E. Balys.

The opera is making good progress also in those republics where music did not become a professional art until after the October Revolution. The Tatar composer N. Zhiganov has created a number of noteworthy operas, including *Musa Jalil*. Non-Russian theatres have staged the operas *Nazugum* by K. Kuzhamyarov, *Birzhan and Sara* by M. Tulebayev (Kazakhstan), *Snowstorm* by S. Vasilenko and M. Ashrafi (Uzbekistan), *Grozovan* by D. Gershfeld (Moldavia), *Pulat and Gulru* by S. Saifiddinov (Tajikistan) and *On the Shores of Lake Issyk* by V. Vlasov, A. Maldibayev and V. Fere (Kirghizia).

THE PRIDE OF THE SOVIET UNION

The best works of Soviet composers, and the high skill of performers—pianists, violinists, singers, conductors—are famed throughout the world.

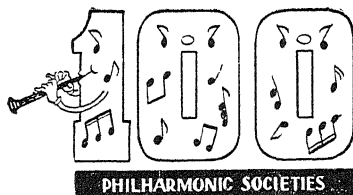
Classical and modern music is being popularized in the U.S.S.R. day after day by some 100 philharmonic societies.

Numerous music schools have been opened in the Soviet Union, including 23 higher, 19 ten-year and 900 children's seven-year schools.

The country's oldest conservatoires—the Chaikovsky State Conservatoire in Moscow and the Rimsky-Korsakov State Conservatoire in Leningrad—play a paramount role in the training of musicians. Many gifted musicians emerge from amateur art groups and societies, which involve millions of people. Functioning on a permanent basis in workers' and collective-farm clubs (there are 127,000 of them) are amateur groups—choirs and folk instrument orchestras. The song festivals, which are traditional in Latvia, Estonia, the Ukraine and other republics, attract vast audiences all over each republic.

The Soviet piano school, headed over many years by Konstantin Igumnov, Heinrich Neuhaus, Alexander Goldenweiser, S. Feinberg, L. Nikolayev and other prominent teachers, has a renown of long standing.

Among the best Soviet pianists who follow up and develop the traditions of the Russian school, are Emil Gilels, Svyatoslav Richter, Lev Oborin, Vladimir Sofronitsky, Maria Yudina, Yakov Zak,



The Conservatoire, Moscow



Pavel Serebryakov, Maria Grinberg, Tatyana Nikolayeva and others.

The Soviet Union is proud of its talented violinists among whom are the world-famous David Oistrakh and Leonid Kogan. The Soviet cello school, too, has reared brilliant musicians, such as S. Knushevitsky, M. Rostropovich and Daniil Shafran.

Ever since 1927, Soviet performers have invariably won prizes at international musical contests.

The success of Soviet pianists at the Chopin contests in Warsaw (Lev Oborin, 1927; Yakov Zak, 1937; Bella Davidovich, 1949) and of Soviet violinists at the Brussels contests (David Oistrakh, 1937; Leonid Kogan, 1950) aroused a world-wide echo. Between 1949 and 1958, Soviet violinists won nine first prizes at most difficult international competitions.

Here is evidence of the achievements of Soviet performers at international contests in the last three years:

1956

The Slavík and Ondříček Contest of Violinists, Prague. B. Gutnikov and Valery Klimov, First Prize.

The Liszt Contest of Pianists, Budapest. L. Vlasenko, First Prize. Mozart Contest of Pianists, Salzburg. G. Mirvis, First Prize.

1957

Marguerite Long and Jacques Thibaud Contest of Violinists, Paris. B. Gutnikov, First Prize.

Wieniawski Contest of Violinists, Poznań. R. Fein, First Prize.

V. Da Motta Contest of Pianists, Lisbon. Naum Starkman, First Prize.

Contest of Pianists in Rio de Janeiro. Sergei Dorensky, Second Prize.

1958

Chaikovsky Contest of Violinists, Moscow. Valery Klimov, First Prize.

Chaikovsky Contest of Pianists, Moscow. Lev Vlasenko, Second Prize.

Brilliant results were also achieved at competitions abroad by the young pianists Yevgeny Malinin, Dmitry Bashkirov, G. Axelrod, M. Voskresensky, L. Berman and V. Ashkenazi; singers A. Maslennikov, Galina Oleinichenko and Bella Rudenko; cellists V. Feigin and A. Lazko; violinists Victor Pickaisien, Eduard Grach, M. Yashvili, Mark Lubotsky, M. Komissarov and many others.

The Soviet Union's foremost symphony orchestras and opera houses are doing much for the progress of Soviet music by popularizing classical and modern compositions.

Pre-revolutionary Russia had only two state opera houses; their number today is 32. There are opera houses in all the Union republics and in some of the autonomous ones. The largest of them are the



The Moiseyev State Folk Dance Company

Bolshoi Theatre in Moscow, Kirov Opera and Ballet Theatre in Leningrad, Stanislavsky and Nemirovich-Danchenko Musical Theatre in Moscow, Shevchenko Theatre in Kiev, Maly Opera House in Leningrad, and the opera houses in Erevan, Baku, Tashkent, Novosibirsk, Riga, Vilnius, Tallinn, Sverdlovsk, Perm and Saratov.

Well-known symphony orchestras are the State Symphony Orchestra of the U.S.S.R., the Moscow Radio Symphony Orchestra, Leningrad Philharmonic Orchestra, State Orchestra of the Ukrainian S.S.R., Moscow Philharmonic Orchestra and some others in the Union republics and regional centres of the Russian Federation.

The orchestras and musical theatres are headed by Yevgeny Mravinsky and Kurt Zanderling (Leningrad), Natan Rakhlin (Kiev), S. Samosud, Alexander Gauk, A. Melik-Pashayev, Konstantin Ivanov, Kirill Kondrashin and Boris Khaikin (Moscow), Leonid Vigner (Riga), N. Niyazi (Baku) and other noted conductors.

Valeria Barsova, Nadezhda Obukhova, Vera Davydova, Ivan Kozlovsky, Sergei Lemeshev, Maria Maksakova, Maria Litvinenko-Wohlgemuth, Ivan Patorzhinsky, Alexander Pirogov, Sophia Preobrazhenskaya, Pavel Lisitsian, Boris Gmirya, Mark Reisen, Kulash Bai-

seitova, P. Amiranashvili, Gohar Gasparyan and numerous other opera singers have won widespread recognition.

The world renown of the Soviet ballet is associated with the names of Galina Ulanova, Marina Semyonova, Natalya Dudinskaya, Olga Lepeshinskaya, Konstantin Sergeyev, Vakhtang Chabukiani and other outstanding dancers.

The foremost dance companies of the Soviet Union are famed for their consummate skill. They are the State Folk Dance Company of the U.S.S.R. (directed by Igor Moiseyev), Beryozka Ensemble, Folk Dance Company of the Georgian S.S.R. and others.

Much of the musical education of the people is accomplished by major choirs, including the State Russian Academic Choir under the direction of Alexander Svetschnikov, State Academical Cappella Choir in Leningrad, Greater Choir of All-Union Radio and Television, Alexandrov Song and Dance Ensemble of the Soviet Army and Dumka Choir (Ukraine).

Guest performances by Soviet companies abroad have been invariably successful. Those of the Bolshoi Theatre ballet company in London (1955) and Paris (1958), of the Svetschnikov Choir in Berlin (1957) and Brussels (1958), Pyatnitsky Choir in Budapest, Helsinki, Vienna and Prague (1957), Alexandrov Song and Dance Ensemble in London, Belgrade and Budapest (1956), and again in Budapest, Brussels and Berlin (1958), and Moiseyev Dance Company in the United States (1958) were acclaimed by the general public and the press.

Popular interest in music is growing steadily. That interest is exemplified by full opera houses and concert halls, millions of radio listeners and the vast scale of amateur art activities. The great musical classics and the best creations of Soviet composers help in moulding the aesthetic taste of the Soviet people.

AMATEUR ART

Many Soviet people go in for amateur stage art and music—in the groups functioning in factory clubs and educational institutions. In 1958 there were 216,000 amateur art groups engaging four million people.

In 1958, amateur theatres, symphony orchestras, choirs and opera and ballet companies gave 770,000 stage performances and concerts, which drew at least 160 million spectators. Amateur artists maintain close contact with and benefit by the experience of professional art companies. Many amateur performers are as skilful as professionals. Indeed, they are often included in professional companies. Periodical all-Union, republican, city and district amateur art reviews help reveal gifted performers.



PAINTING THAT CONVEYS GREAT IDEAS

In 1918 the Soviet Government issued, on Lenin's initiative, decrees nationalizing the palaces and museums, including the Tretyakov Gallery, prohibiting the export of works of art or antiques to foreign countries and making scientific works, literary writings, musical compositions and works of art national property. Over 550 old palaces and country mansions and about 1,000 private art collections were registered and some 200,000 works of art collected all over the country.

"Art belongs to the people. It must be rooted deeply in the thick of working masses. It must be understandable to these masses and loved by them. It must combine their feelings, thoughts and will, and uplift them. It must rouse the artist in them and enlighten them." (*Lenin*)

Art museums were gradually turned into centres of artistic enlightenment and of research in art monuments.

In addition to art schools, the doors of which were thrown open to the people, numerous art studios were set up—at factories, in government offices and in clubs. There were 19 such studios functioning in Moscow in 1918 and 18 in Petrograd.

The fine arts of the Soviet Union were born in the stormy days of the Revolution, which lent them a militant trend and made them an effective weapon of the people.

The Lenin "monumental propaganda" plan, which called for works of revolutionary significance understandable to the people and serving as a powerful means of public education, played a momentous role in charting the course of development of Soviet art.

The Council of People's Commissars published the Lenin plan on April 12, 1918 as a decree "On the Demolition of Monuments Erected in Honour of Tsars and Their Servants, and on the Designing of Monuments to the Russian Socialist Revolution." The plan for "monumental propaganda" brought a ready response from artists, sculptors and architects. More than 40 monuments were erected in Moscow and Petrograd from 1918 to 1921. In the same period upwards of 50 memorial plaques and bas-reliefs displaying revolutionary slogans were set up in Moscow. Ever since then, adorning Soviet towns with posters, artistic panels and slogans on the occasion of revolutionary or popular festivals has been a tradition.

The "Windows of ROSTA Satire," initiated by Vladimir Mayakovsky and Mikhail Cheremnykh, were quick to comment on events in the Soviet Republic's life and so were posters by D. Mohr, V. Deni, A. Apsit and other artists. Between 1917 and 1920 posters contributed to the formation of a genuinely new, realistic art.

IN PEACE AND IN WAR

Soviet art went through several stages of development in mastering the method of socialist realism, which enabled it to depict truthfully the new social relations and new man with his aspirations and ideals. The significance of each genre and each artist was gauged by its or his share in building the new society and aesthetic and ideological influence which the works in question exerted on the masses.

Soviet art has always concerned itself with the rousing themes of the day. As early as the twenties, many canvases presented new aspects of the life of the people, specifically "A Committee of Poor Peasants Meets" (1923) and "In a Rural Registry Office" (1928) by Alexander Moravov, "Meeting of a Village Party Cell" (1924) by Y. Cheptsov, "The First Slogan" (1924) by Nikolai Terpsikhov, "Soviet Court" (1928) by Boris Johanson, "Delegate" (1927) and "Chairwoman" (1928) by Georgy Ryazhsky and "Young Pioneer with Books" (1926) by N. Kasatkin.

The life of the people, revolutionary battles of the Civil War, the activity of the leader of the Revolution, Lenin, and of prominent statesmen were a source of inspiration to artists and sculptors. The paintings "Interrogation of Communists" by B. Johanson (1933), "Lenin on the Rostrum" (1930) and "Stalin and Voroshilov in the Kremlin" (1938) by Alexander Gerasimov, "Lenin in Smolny" (1930) and "Portrait of Maxim Gorky" (1937) by Isaak Brodsky, "The Defence of Petrograd" (1928) by Alexander Deineka, "The Paving-Stone Is the Proletariat's Weapon," sculptured by Ivan Shadr (1927), the statue "V. I. Lenin" (1930-32) by Nikolai Andreyev and Mitrofan Grekov's canvases showing Red Army heroism in the Civil War years are all classics of Soviet art that have greatly influenced its subsequent progress. In the early five-year plan years many artists went to construction sites and collective farms, to the Far East and the Far North, to be able to paint, sculpture or otherwise depict the selfless effort of the builders of a new way of life. The result was paintings by Pyotr Kotov, Serafima Ryangina, Ilya Lukomsky, A. Plastov, A. Bubnov and other artists.

Soviet artists often resorted to social synthesis. "Worker and Collective-Farm Woman," a sculptured group by Vera Mukhina (1937), is a most typical example. It topped the Soviet pavilion at the Paris World Fair, and was interpreted as a symbol of the Land of Socialism.

More and more frequently, Soviet artists portrayed specific or typified images of Soviet workers, peasants, intellectuals, Party leaders or statesmen. The desire to reveal the single-mindedness, spiritual beauty and vivifying optimism of Soviet man is obvious in works by Matvei Manizer (Lenin statue in Ulyanovsk, 1940), V. Bogolyubov and V. Ingal (Orjonikidze statue, 1937), Nikolai Tomsy ("Kirov Memorial," 1937), Sarah Lebedeva (Portrait of V. Chkalov, 1938), Leonid Sherwood (sculpture "The Sentinel," 1933), Ilya Lukomsky ("A Worker of the Land of Soviets," 1940), Mikhail Nesterov (portraits of I. Pavlov, 1935, and V. Mukhina, 1940), Vasily Yefanov ("Unforgettable Meeting," 1936-37), G. Ryazhsky ("Collective Farm Bri-



"Worker and Collective-Farm Woman" by Vera Mukhina

gade-Leader," 1932, and "Chuvash Teacher," 1932) and numerous other sculptors and painters.

Among the widely known works of Soviet art are landscapes by Sergei Gerasimov ("Winter," 1939, and "Windy Evening, Samarkand," 1941), N. Krymov ("Morning in the Gorky Recreation Park," 1937, and "Summer Day in Tarusa," 1939-40), Georgy Nissky ("Dusk on the Klyazma," 1946, and "Seascape with Lighthouse," 1950), Nikolai Romadin (a series of landscapes entitled "Volga, a Russian River," 1944), etc.

The cultural revolution accomplished in the Soviet Union along with far-reaching socialist reforms made for the progress of non-Russian art as well. In the Union republics there emerged a great many gifted painters, sculptors and other artists, including Alexei Shovkunenko, N. Samokish, V. Kasiyan, Tatyana Yablonskaya, Sergei Grigoryev and Georgy Melikhov (Ukraine); Valentin Volkov and Alexander Grube (Byelorussia); S. Aghajanyan, Martiros Saryan, Sedrakovich Arakelyan and Sergei Stepanyan (Armenia); Valentin Topuridze, Y. Nikoladze, Irakly Toidze, Ucha Japaridze and Alexander Tsimakuridze (Georgia); Ural Tansikbayev, Z. Kovalevskaya and P. Benkov (Uzbekistan); Azim Azim-Zadeh, Mikael Abdullayev and Pyotr Sabsai (Azerbaijan); S. Chuikov (Kirghizia) and Eduard Einman (Estonia). Professional collaboration between artists from various republics expanded, non-Russian artists drawing more and more on the assistance of their advanced Russian fellow artists.

The work of artists was part and parcel of the inspired effort of the entire Soviet people. This found forceful expression during the war, when the artist's brush and the sculptor's chisel became powerful weapons. Posters by Kukryniksy, Mikhail Cheremnykh, Boris Yefimov, Dementy Shmarinov, Victor Koretsky, Vladimir Ivanov and other artists conveyed the sentiments of a people in arms.

During the war years the Iskusstvo Publishing House alone produced 800 posters in a total of 34 million copies.

The "Windows of ROSTA Satire," of Civil War days were succeeded by "TASS Windows," illustrations for which were supplied by Mikhail Cheremnykh, Pavel Sokolov-Skalya, Nikolai Radlov, Georgy Savitsky, Azim-Zadeh, L. Abdullayev and other artists. More than 1,500 such "windows" were displayed from 1941 to 1945.

The stirring events of the Great Patriotic War were rendered in the serials "We Shall Neither Forget nor Forgive" by D. Shmarinov (1942), "Leningrad During and After the Blockade" by A. Pakhomov (1942-44), "Sevastopol" by Leon Soifertis (1941-42), "From Leningrad to the Baltic" by S. Boim (1941-44) and "War Paths" by V. Kurdov (1942-45).

The patriotism of Soviet people and their staunchness and bravery were painted with great depth and sympathy in "Tanya" by Kukryniksy (1942 and 1947), "The Nazi Plane Is Gone" by A. Plastov (1942), "Partisan's Mother" by Sergei Gerasimov (1943), "Into Slavery" by G. Ryazhsky (1942), "After the Fascist Invaders Were Thrown Out" by Taras Gaponenko (1943-46) and other canvases.

The defenders of their socialist country, heroes of front and rear, furnished the main theme of sculpture in those years. Among



“After the Battle” by Yuri Nepritseyev

the best are sculptural portraits of the commanders I. Khizbnyak and B. Yusupov (1942) by Vera Mukhina, Generals N. Vatutin (1944-47) and I. Chernyakhovsky (1945) by Y. Vuchetich, Hero of the Soviet Union M. Selnitsky, a partisan (1943), by Z. Azgur, and General K. Leselidze (1945) by Y. Nikoladze, as well as "Mother" (1945-46) by V. Lishev, "Zoya" (1942) by M. Manizer and "The Unvanquished" (1943) by Y. Belashova.

ALONG THE PATH OF SOCIALIST REALISM

The 115 art museums of the Soviet Union are visited by 10 million people a year.

The foremost Soviet artists always seek to express through their art the inmost sentiments of man and the most progressive ideas of their day. And that explains why over 1,000,000 people visited the All-Union Art Exhibition in 1957.

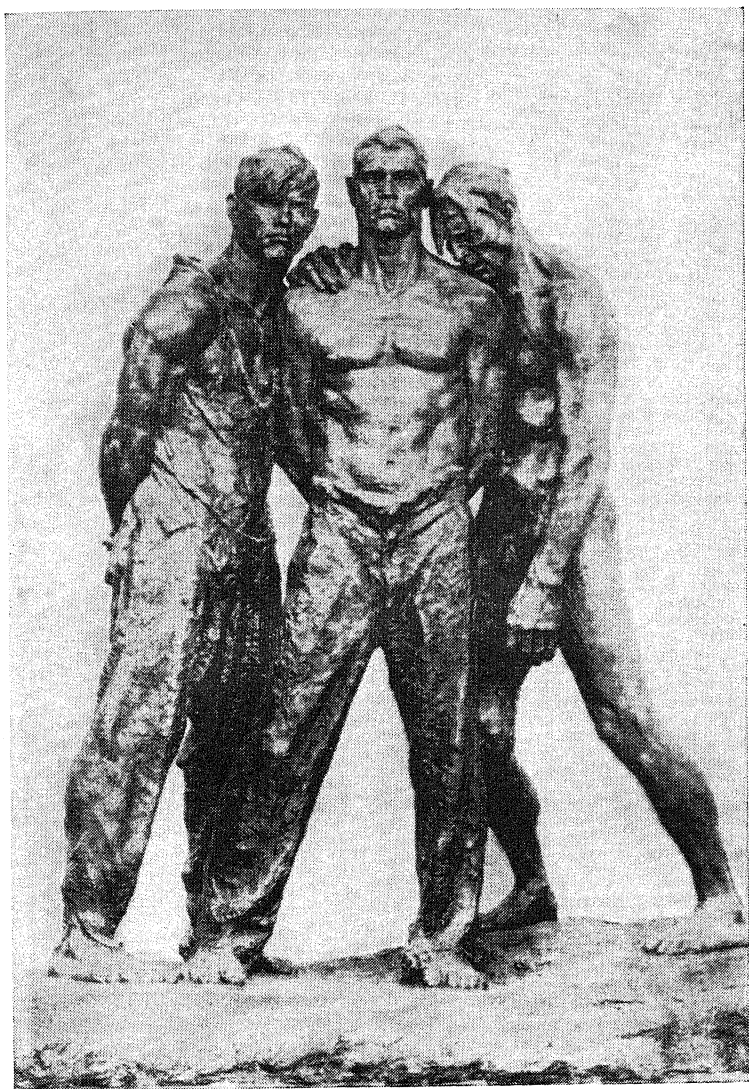
Displayed in the specially equipped Manège building, which covers 7,000 square metres and is large enough to admit some 3,000 visitors at a time, were 8,000 paintings, drawings and sculptures, as well as works of scene-painting and of the applied and other arts of all the republics of the U.S.S.R.

Besides "The Socialist Revolution Has Been Accomplished," by B. Johanson, "Kerensky's Last Appearance" by Kukryniksy, "For Soviet Power" by Sergei Gerasimov, "Self-Portrait" (Lenin Prize winner) by Sergei Kononov and paintings by M. Saryan, P. Korin, G. Nissky, A. Deineka and other merited artists, the Exhibition acquainted visitors with the work of younger artists. O. Yermeyev's "Lenin" (Lenin's arrival in revolutionary Petrograd), Yury Nikolayev's "There Were Crowds All Along the Route" (meeting of the funeral train bringing Lenin's body), Y. Tulin's "Lena Gold-Fields, 1912" (the shooting of Lena gold-miners), V. Kostetsky's "Party-Membership Card" (issuing a Party-membership card before the battle), I. Selivanov's "Arsenal Workers" (a series of lino cuts) and F. Fiveisky's sculptured group "Stronger Than Death" (awarded a First Gold Medal at the Sixth World Youth Festival) are superb works of art full of deep meaning.

The joyful and optimistic paintings "Moscow Stories" by Y. Pimenov, "Ploughers of Virgin Land" by D. Mochalsky, "Lunch Hour" by A. Nikich, "Builders" by D. Tegin, "Donbas Miners" by V. Chernikov and "Haymaker" by A. Plastov, the drawings "Students on Virgin Land" by L. Roiter, the lyrical sculptured group "The Song" by M. Baburin, "A Dream" by Y. Belashova, etc., bear on the life and work of Soviet people, with whom personal interests are one with those of society.

Numerous noteworthy works have been created by artists from the non-Russian republics of the Union, such as "Lenin Speaking on the GOELRO Plan" by L. Shmatko, "A *Subbotnik*, 1920" by Y. Zher-





"Stronger Than Death"

dzitsky, "Lenin with a Worker's Family" by M. Krivenko, "Nurse" by M. Bozhy, "Men in a Coal-Face" by M. Chepik, the sculptures "Team-Leader" by V. Klovov, "Crossing the Sivash" by V. Seliber, the sculptured groups "Hiroshima" by V. Galochkin (Ukraine); "Choosing a Bracelet" by A. Jafarov, "Joy" by M. Abdullayev, "Spring Market" by E. Mamedov (Azerbaijan); "Spring" by D. Gabitashvili, "Parting Advice" by U. Japaridze (Georgia); "V. Hambardzumyan's Home" and "Erevan Flowers" by M. Saryan, "On the Shore of Lake Sevan" by G. Khanjyan (Armenia); "The Year 1919 in Lithuania" by V. Mackevičius, prints by V. Jurkunas illustrating the poem "The Four Seasons," the sculpture "Collective-Farm Stableman" by J. Kedainis (Lithuania); "Lettish Shots" by G. Klebahs and I. Zariņš, the sculpture "Break the Shackles of Capitalism" by T. Zalkalns (Latvia); "Portrait of the Chinese Artist Chi Mu-tung" by I. Klychev (Turkmenia) and the Indian studies of S. Chuikov (Kirghizia) are only a few of the works that are worthy of special note.

The Union of Soviet Artists has a membership exceeding 7,000, of whom 16 bear the title of People's Artist of the U.S.S.R. and 55, that of People's Artist of the Republic.



Soviet artists use different methods and techniques. But all of them—the Ukrainian artist T. Yablonskaya as the Azerbaijanian M. Abdullayev, and the young sculptor F. Fiveisky as the veteran sculptor Sergei Konenkov—are inspired by love of life, faith in the beauty and strength of the working man, and an optimistic world outlook, which accounts for

the appeal of Soviet art and for the beneficial influence it has on the minds and sentiments of its contemporaries.

THE PRINTED WORD

PLATFORM OF THE PEOPLE

Newspapers and magazines have become a daily necessity with all Soviet people.

Soviet newspapers call the reader's attention to outstanding issues of the day, they tell him about the manifold aspects of life in his country and help him see all that the people are doing to build communism.

Most of the pre-revolutionary newspapers appeared in Russian. The 14 newspapers published in other languages had a negligible circulation.

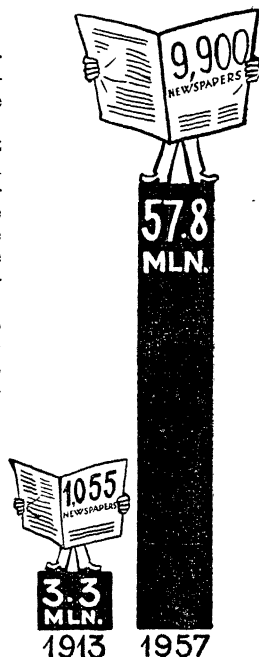
Since the Soviet state was established, newspapers have been appearing in 81 languages, including 20 languages of non-Russian peoples who had no written language before the Revolution.

In what are now the Tajik and Kirghiz republics, there were no newspapers at all in 1913. Today their number runs into several dozens. In most Union Republics, the majority of newspapers are published in the language of the indigenous population. The Soviet Union now has 25 all-Union newspapers, 163 republican, 320 territorial, regional and district papers, 107 papers appearing in Autonomous republics or regions, 4,689 town and rural district papers and 4,632 factory and collective-farm papers.

Besides newspapers of a general character, there are specialized ones. In 1957 as many as 16 newspapers were concerned with problems of technology, industry and civil engineering and 90 papers, with transport; there were also newspapers dealing with agriculture, cultural problems, literature, art and sport.

Every factory, collective or state farm, government institution or higher educational establishment has a wall newspaper.

NEWSPAPERS: NUMBER AND CIRCULATION



Pravda has a circulation exceeding that of all the newspapers which Russia had in 1913.

Pravda is published in Moscow. Simultaneously with the people of Moscow, it is received by those of 15 other big cities, including Leningrad, Kiev, Lvov, Tashkent, Rostov, Kharkov and Irkutsk, where it is printed from matrixes delivered by air.

"A workers' newspaper is a workers' platform," Lenin wrote in 1912, meaning *Pravda*. Soviet papers are a platform for the people, for whom they are published and who contribute to them.

With help from their own workers' and village correspondents, Soviet papers supply a great deal of information on local developments. They popularize the best working methods and expose shortcomings. They arrange exchanges of information and experience by workers of various trades and professions, survey the results of collective effort and discuss various practical aspects of communist development.

Newspapers receive millions of letters and reports from industrial workers, collective farmers, Party, government and trade-union workers, economic executives and other readers.

In 1956 the newspapers appearing in Moscow received over one million letters from their readers.

During the discussion of the theses of N. S. Khrushchov's report "On the Further Improvement of Management in Industry and Construction," 68,000 people sent their comments and suggestions to various periodicals. Some 126,000 articles and letters were received by the press, radio and TV editors during the discussion of the theses of N. S. Khrushchov's report "On the Further Development of Collective-Farm System and

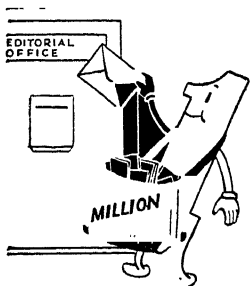
the Reorganization of the Machine and Tractor Stations"; 102,941 of them were published. Three Moscow newspapers—*Pravda*, *Izvestia* and *Selskoye Khozyaistvo*—received 5,975 articles and letters, of which they carried 1,508.

There were 750 journals and magazines appearing in the Soviet Union in 1957.

The circulation of the pre-revolutionary magazine *Niva*—200,000 copies—was considered very high. Today *Murzilka*, a magazine for children of pre-school age, alone has a circulation of 1,000,000, while *Rabotnitsa*, a magazine for their mothers, is brought out in 1,700,000 copies and *Krestyanka*, in 1,400,000 copies. Forty-one journals and magazines have a circulation exceeding 100,000 copies each and five, from 1,000,000 to 1,700,000 copies.

Altogether there are more than 3,000 journals, magazines and other similar publications—symposiums, transactions, bulletins, etc.—appearing in the Soviet Union. Their annual circulation totals 533,000 000.

Nearly every branch of the national economy, culture or science has a journal of its own.



There are 136 political, social and economic journals, 118 literary and art journals and magazines, 120 journals concerned with various branches of technology, industry, transport and communications, 72 agricultural journals and 70 health and medical ones.

They are published in 55 languages, including 14 foreign ones. It was not until the Soviet state came into being that journals were started in the Bashkir, Buryat, Kazakh, Ossetian, Chuvash and numerous other languages. In 1913 what is now the Uzbek Republic had only three journals; Armenia had two and Azerbaijan 13, while Tajikistan, Kazakhstan and Kirghizia had none at all. In 1957, these six Union republics were publishing 350 journals, periodical symposiums and bulletins.

There are journals and magazines in the Soviet Union appearing in English, Arabic, Chinese, Hungarian, German, Hindi, Urdu, Japanese, Serbo-Croatian, French and other foreign languages.

OVER 7,500 BOOKS A MINUTE

There were about 550,000 book titles published in Russia in the almost 400 years which passed from the time the first book was printed till the October Revolution. In the Soviet Union, the 1,386,200 books published between 1918 and 1957 totalled more than 20,000 million copies. The Soviet Union accounts for 25 per cent of the books published throughout the world.



Over 7,500 books are printed in the Soviet Union every minute.

PER CAPITA OUTPUT OF BOOKS



For number of book titles brought out, the Soviet Union firmly holds first place in the world. In 1956 it printed as many books as the United States, Britain, France and the German Federal Republic combined. In 1965, the total of books published will approximate 1,600 million copies.

Political, social and economic literature makes up almost one-fifth of the total number of books published. It brings to the Soviet people the ideas of Marx, Engels and Lenin, the great leaders of the socialist revolution.

Between 1917 and 1958 Lenin's writings were published 7,491 times in the Soviet Union, in 88 languages of the U.S.S.R. and foreign coun-

tries. They totalled 300 million copies.

The writings of Lenin have long since become books of reference in every Soviet home. In fact, more and more people in other coun-

tries are turning to them for guidance. About 1,000 of Lenin's writings were published abroad in 1956 in numerous languages.

Among the world's most frequently published books, the writings of Lenin hold first place.

No country in the world prints as many scientific books as the Soviet Union. Compared with 1913, the aggregate edition of technical literature has increased 95 times over. In 1955 books treating of the exact, natural and applied sciences accounted for 59 per cent of the total of books printed in the Soviet Union, while in the United States the corresponding percentage was 20, in Britain 22 and in France 28.

Every fourth person in the Soviet Union is a student and every fourth book coming out here is a textbook.

Soviet books appear in many languages. Before the Revolution books were published in 49 languages and after it—in 1957—in 89 languages of the country. Soviet times saw the publication, for the first time in history, of books in the languages of peoples that acquired a written language only after the Revolution, such as Abazin, Adygei, Lezghin, Nogai, Tabasaran, Tat, Tuvan, etc.

The number of book titles published in the languages of the Soviet Union (exclusive of Russian) rose from 1,575 in 1913 to 14,978 in 1957, the total number of copies increasing from 4,300,000 to 172,900,000. Books in the non-Russian languages of the U.S.S.R. constitute 25 per cent of all the books printed in the country (against 6 per cent in 1913).

In 1956 alone 100 million books by Soviet authors were printed and sold abroad.

The Soviet Union holds first place in the world as a publisher of translations.

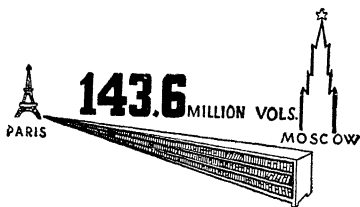
Between 1918 and 1957 a total of 16,685 books of fiction by 1,942 foreign authors were published in translations into Russian and other languages of the Soviet Union. The total number of copies came close to 500 million.

Books by authors from the People's Democracies are prominent among translations.

From 1918 to 1957 books by Chinese writers appeared in 22,600,000 copies, by Czech and Slovak authors in 20,800,000, Polish in 19,500,000 and Hungarian in 11,600,000 copies.

The most widely translated in the Soviet Union are French authors, then come American, British and German authors.

From 1918 to 1957 French authors were published in almost 143,600,000 copies, a number sufficient to fill a shelf stretching all the way from Moscow to Paris.

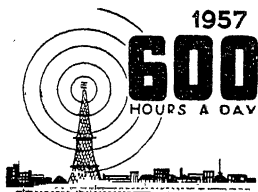


THIS IS MOSCOW CALLING

The words in the title above first rang out in 1922, when the first Soviet broadcasting station, then the most powerful in the world (12 kw.), was put into service. Two years later similar stations went into operation in Leningrad, Kiev and Nizhny Novgorod. In 1929 their number was 23 and by the end of the second five-year period (1937), 90. The number and capacity of Soviet broadcasting stations have been increasing ever since.

Radio, for whose invention mankind is indebted to the great Russian scientist Alexander Popov, is a powerful means of technological progress and of cultural and political education of the Soviet people. The voice of the Soviet Union can now be heard all over the globe.

Moscow broadcasts three programmes—on long, medium and short metre bands. In the more densely populated industrial areas of the Union, broadcasting on ultra-short waves, which are insensitive to atmospheric or industrial interferences, has been developing in recent years.



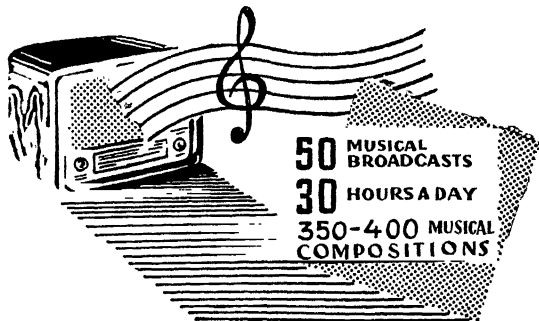
In 1957 the volume of Soviet broadcasts reached almost 600 hours a day (exclusive of district and intra-factory broadcasting). Moscow broadcasts took up 180 hours. Broadcasts are conducted in more than 90 languages of the Soviet Union and foreign countries.

Soviet broadcasts are most varied in content, being intended for the most diverse listener groups. There are special broadcasts for people engaged in industry or agriculture, children of pre-school age, school children, youth, women, etc. The radio journals "Science and Technology," "Art," "Round the Country" and "Latest News" (broadcast from eight to ten times a day) are regular features. The broadcasts "Looking at the Economic Map of Our Country," "Poetic Calendar of Russian Nature," literary broadcasts and numerous other serials enjoy great popularity.

In 1957 Moscow's daily programmes included 50 to 60 musical broadcasts lasting almost 30 hours and comprising from 350 to 400 compositions performed by dozens of groups and many noted soloists.

Radio Moscow acquaints its listeners with the music of the peoples of both the Soviet Union and foreign countries. Some 100 concerts





are relayed monthly from various cities to Moscow. Broadcasts are exchanged on a large scale with the People's Democracies.

Listeners help in drafting musical broadcasts by sending in collective or individual requests. About 352,000 letters were received by All-Union Radio from listeners in 1957.

Republican, regional or local (city or rural district) stations not only relay broadcasts of Radio Moscow, but also broadcast their own programmes—lectures, talks and concerts.

Radio is widely used in town and country alike. By early 1958 the Soviet Union had 36,645 radio centres, and the number of receivers exceeded 34,800,000.

There was an average of one radio receiver per four townspeople or per eight rural inhabitants, that is, one unit per six inhabitants of the Soviet Union.

Radio enables huge areas thousands of kilometres away from Moscow and other big industrial and cultural centres to share in the full spiritual life of the country.

Thanks to expanding *television*, millions of people now have the opportunity to watch the most interesting plays, concerts, sports competitions and other events, and to "attend" mass rallies and demonstrations, without leaving their homes.

TV broadcasts were first sent out in the Soviet Union in 1931, and 1938 saw the first TV centres start operation in Moscow and Leningrad. The third TV centre—in Kiev—was commissioned in 1951. After that TV centres were set up in Riga, Kharkov, Sverdlovsk, Tallinn, Minsk, Tashkent, Baku, Tbilisi, Yerevan, Vilnius and some other cities. By Radio

Day 1958 there were 41 TV centres operating throughout the country, besides those set up by amateurs.

In 1950 the volume of TV broadcasting in the U.S.S.R. was 1,300 hours and in 1958, about 38,000 hours—exclusive of the broadcasts given by relay stations.

Relay stations, which make it possible to receive TV programmes, have been built in Kalinin, Vladimir, Kaluga, Ryazan, Yaroslavl, Ivanovo and other towns. An additional number of them will be put into operation before long in Kursk, Orel, Kuldiga (Latvia) and elsewhere.

Inter-urban cable and radio relay lines are being built for long-distance TV programmes. The Leningrad-Tallinn line was put into tentative service in late 1958. It is equipped with the most up-to-date apparatus guaranteeing high-standard exchanges. Radio relay and cable lines now under construction will enable Kiev, Orel, Kharkov, Dnepropetrovsk and some other cities to watch Moscow TV programmes. In the near future relay lines will interlink the TV centres in the capitals of the Central Asian Soviet republics—Tashkent, Alma-Ata, Frunze, Ashkhabad and Stalinabad. TV programmes will be exchanged by Tallinn, Vilnius, Riga and Minsk. Later on, TV

programmes will also be exchanged with a number of foreign countries.

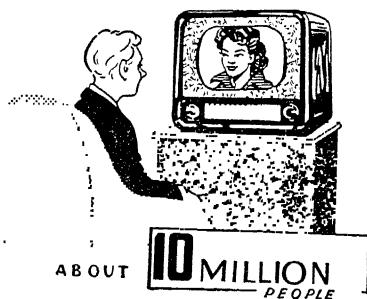
The TV receiving network is growing fast. In 1950 there were a mere 14,800 TV sets in the Soviet Union; at the beginning of 1958, their number had almost reached 2,000,000.

About 100 new TV centres and stations will be built by 1965, and the number of TV receiving centres will reach 12,500,000.

Altogether some 10 million people watch Soviet TV broadcasts daily.

The number of televiewers is increasing in the countryside as well; the rural population of Moscow Region had over 100,000 TV sets in early 1958.

Moscow TV broadcasts are watched not only in Moscow Region, but also in the Tula, Ryazan, Kalinin and other regions.



YOUTHFUL IN BODY AND MIND

"Russians Score Victory!" "Russian Team Captures 37 Gold Medals!" "Soviet Sport Leads the Field!"

With these and similar headlines newspapers all over the world announced the Soviet Union's triumph at the 16th Olympic Games in Melbourne in December 1956. It was a far cry indeed from the pale showing made by Russia about four and a half decades earlier, at the 1912 Olympics.



Here are a few figures that speak for themselves. Some 22 million

PERSONS GOING IN FOR PHYSICAL CULTURE

22
MILLION

persons go in for sport in the Soviet Union today, as compared with a mere 50,000 before the Revolution of 1917. In the course of only one year, 1957, Soviet sportsmen registered more than 90 performances that were better than the official world records.

The socialist state provides every facility for the development of physical culture and sport on a large scale.

Sport facilities include 1,659 up-to-date stadiums, 27,600 football fields, more than 200,000 volleyball and basketball courts, and hundreds of swimming pools, rowing centres, ski centres and tourist and mountaineering camps. There are over 150 secondary and higher schools of physical culture. Every year they graduate upwards of 13,000 coaches, PT instructors, etc.

50
THOUSAND



1917

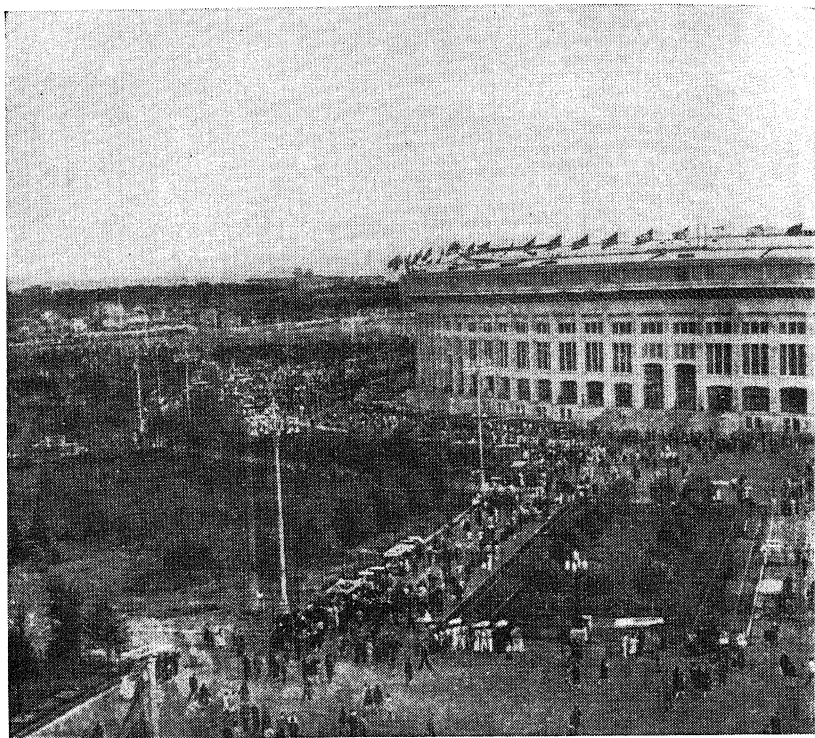


1957

THE ROAD TO HEALTH

In the Soviet Union, physical culture is a broad concept. It includes the physical education of children and adolescents, hygiene on a nation-wide scale, health building, preparation for labour and defence, character training, and all-round physical development.

Physical culture is an important element in the system of health protection and an effective weapon in the battle against premature old age.



Luzhniki

Setting-up exercises, volleyball and other games and sports hold a prominent place in the activities at holiday homes and health resorts where hundreds of thousands of Soviet citizens spend their annual holidays.

Many factories and offices have introduced five-minute periods of setting-up exercises for their staffs at the start and in the middle of the workday. This combats fatigue and raises the working capacity.

The Soviet state pays particular attention to the physical education of the rising generation.

There are 193 sports schools for teen-agers and 1,031 for younger children, with a total enrolment of about 300,000. The 77,000 school sports clubs have a membership of more than 8,000,000.





Stadium

Sports and other forms of physical recreation are by no means a monopoly of the young people in the Soviet Union. Many middle-aged and elderly persons are keen sportsmen. An outstanding example is M. N. Godin, now well over 60, who first took up sport at the age of 44 and has competed in many marathon runs. Another is the well-known scientist Olga Lepeshinskaya, who passed the tests for the Prepared for Labour and Defence Badge when she was 64.

The Prepared for Labour and Defence standards in track and field, swimming, skiing, gymnastics, etc., underlie the Soviet system of physical training. They were introduced on the initiative of the Young Communist League in 1931.



By qualifying for the Prepared for Labour and Defence Badge one gets a good start on the road to sporting prowess. Take, for example, that famous Soviet sportswoman Alexandra Chudina, an Honoured Master of Sport. The many prizes she has won, from gold and silver medals to cups, cut-glass vases and statuettes, take up almost a whole room in her flat. One of the most treasured items in the collection is the Prepared for Labour and Defence Badge which Alexandra Chudina won at the very outset of her career.

SPORTS FOR THE MILLIONS

In the Soviet Union there are 3,600,000 track and field athletes, 2,700,000 volleyball players, 2,500,000 skiers and more than 1,200,000 football players. The number of chess enthusiasts exceeds 1,600,000. On the top rungs of the ladder stand the 11,500 who hold the titles of Master or Honoured Master of Sport. They include such veterans as Maria Isakova, three-time women's speed skating champion of the world, Galina Zybyina, who set up 12 world records in the shot put, Vladimir Kuts, that great long-distance runner of our time, Vsevolod Bobrov, the popular football and ice-hockey star, Victor Chukarin, gymnastics champion of the Helsinki and Melbourne Olympics, and world chess champion Mikhail Botvinnik.

The best-known sports societies are Spartak, Dynamo, Labour Reserves and Burevestnik. Rural sportsmen in the various republics and also the Soviet Army have societies of their own.

Club, city, district, regional and republican championships are held in all sports, including those cultivated by the various nationalities. Large-scale tournaments with a programme of many sports are also arranged. These attract larger numbers of entrants than ever registered anywhere else in the world. "Olympic Games on the scale of a single country," is what foreign newsmen called the finals of the Peoples' Games of the U.S.S.R. held in Moscow from August 5 to 16, 1956. The programme consisted of 21 sports.

There were 5,869 competitors at the Helsinki Olympics in 1952 and about 4,000 at the Melbourne Olympics in 1956. A total of 9,224 first-category sportsmen and Masters vied for honours at the Peoples' Games of the U.S.S.R.

"I came expecting to be surprised," said Atanase Mermingas, President of the Greek Football Federation, a guest at the Games. "But what I saw in Moscow surpassed all my expectations. I was thrilled, overwhelmed, astounded—whatever you like. It is hard to believe that what took place at your splendid new stadium was at all possible."

The Games resulted in 385 new records of the Union republics, and 33 new U.S.S.R. records, of which 9 were better than the official world marks and 2 better than the European records. This was a review of the reserves of Soviet sport, a huge school in which young men and women of 40 nationalities competed and learned from one another.

Before the finals of the Peoples' Games had come competitions at factories and mills, state farms and collective farms, offices and schools, and then district, city, regional and republican Games. These had a total of 17,000,000 contestants, a record number in sporting annals. In the course of that one year, 1956, the number of Masters of Sport grew by more than 1,000.

The Second Soviet Peoples' Games (1959) were held on a still bigger scale.

Sport is popular in all the Union republics. Azerbaijan, for instance, now has about 305,500 sportsmen, or six times as many as the whole of Russia in 1913. There are more than 580,000 in Uzbekistan and 689,000 in Kazakhstan. In 14 Union republics (not counting the Russian Federation) there are upwards of 41,000 sportsmen with a first-category rating and more than 3,360 Masters.

More than half of the Soviet Union's record-holders live in the Ukraine, Georgia and other republics except the Russian Federation. In tsarist times, however, there was not a single record-holder among the non-Russian nationalities.

At the Melbourne Olympics the Ukrainian sportsmen on the U.S.S.R. team captured more prize places than the teams of Britain, France and many other countries.

During the past ten years Soviet sportsmen have improved on 3,512 U.S.S.R. records, 590 world records including.

FORGING AHEAD

We have sporting contacts with 62 countries. In 1957 alone 242 of our teams went abroad and 213 teams from other countries came to the Soviet Union, where they performed in nearly 100 towns.

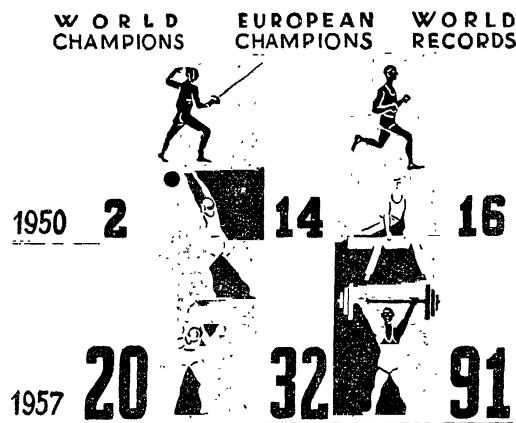
Soviet sports organizations are members of 36 international bodies. Between 1946 and 1957 our teams competed in 127 official international contests (Olympic Games and European and world championships), winning a total of 369 first places, 171 second places and 160 third places.

The weight-lifters, track and field athletes, basketball players, gymnasts, marksmen, wrestlers, modern pentathletes, speed skaters and chess players of the Soviet Union now lead the world. First-rate international showings have been made by our football, ice-hockey and volleyball teams, fencers, horsemen, boxers, rowers and divers.

Seven hundred prize places were won by Soviet sportsmen in major international contests between 1946 and 1957. By the beginning of 1958 they held one-third of all the world records.

Soviet sport entered a new stage in its development in 1959 when the functions of the State Committee for Physical Culture and Sport were turned over to a public organization, the Union of Voluntary Sports Societies. Through their elected councils sportsmen themselves now decide all matters relating to the large-scale promotion of sport and tourism. Physical culture and sport have truly become the affair of the people at large.

SOVIET SPORTSMEN: WORLD AND EUROPEAN CHAMPIONS



WORLD RECORDS SET UP BY SOVIET SPORTSMEN*

Event	Record	Holder	Year
TRACK AND FIELD			
<i>Men</i>			
Running			
5,000 metres . . .	13 min. 35.0 sec. . .	V. Kuts	1957
10,000 metres . . .	28 min. 30.4 sec. . .	V. Kuts	1956
30,000 metres . . .	1 hr. 35 min. 01.0 sec. . .	A. Ivanov	1957
Marathon	2 hr. 15 min. 17.0 sec. . .	S. Popov	1958
(best performance)			
Walking			
10,000 metres . . .	42 min. 18.4 sec. . .	G. Panichkin	1958
15,000 metres . . .	1 hr. 05 min. 18.0 sec. . .	L. Spirin	1957
20,000 metres . . .	1 hr. 27 min. 38.6 sec. . .	G. Panichkin	1958
30,000 metres . . .	2 hr. 19 min. 43.0 sec. . .	A. Vedyakov	1958
1 hour	14 km. 0.58 metre . . .	G. Panichkin	1958
2 hours	25 km. 883 metres . . .	A. Vedyakov	1958
FIELD EVENTS			
High jump	2.16 metres	Y. Stepanov	1957
Hop, step and jump	16.59 metres	O. Ryakhovsky	1958

* As of November 1958.

Event	Record	Holder	Year
<i>W o m e n</i>			
Running			
100 metres	11.3 sec.	V. Krepkina	1958
400 metres	53.6 sec.	M. Itkina	1957
800 metres	2 min. 05.0 sec. . .	N. Otkalenko	1955
80 metres hurdles	10.6 sec.	G. Bystrova	1958
3×800 metres relay	6 min. 27.4 sec. . .	Ukrainian S. S. R. team	1958
FIELD EVENTS			
Discus throw . . .	57.04 metres	N. Dumbadze	1952
Javelin throw . .	57.49 metres	B. Zalagaitite . . .	1958
Shot put	16.76 metres	G. Zybyna	1956
Pentathlon	4,872 points	G. Bystrova	1958
Swimming			
<i>M e n</i>			
400 metres medley	5 min. 12.9 sec. . . .	V. Struzhanov . . .	1957
SPEED SKATING			
<i>M e n</i>			
500 metres	40.2 sec.	Y. Grishin	1956
1,000 metres . . .	1 min. 22.8 sec. . .	Y. Grishin	1955
1,500 metres . . .	2 min. 08.6 sec. . .	Y. Grishin	1956
		Y. Mikhailov	1956
5,000 metres . . .	7 min. 45.6 sec. . .	B. Shilkov	1955
Total for four distances (500, 1,500, 5,000 and 10,000 metres) .	184,638 points	D. Sakunenko . . .	1955
<i>W o m e n</i>			
500 metres	45.6 sec.	T. Rylova	1955
1,000 metres . . .	1 min. 33.4 sec. . .	T. Rylova	1955
1,500 metres . . .	2 min. 25.5 sec. . .	K. Shchegoleyeva . .	1953
3,000 metres . . .	5 min. 13.8 sec. . .	R. Zhukova	1953
3,000 metres . . .	5 min. 09.2 sec. . .	K. Shchegoleyeva . .	1954*
Total for four distances (500, 1,000, 1,500 and 3,000 metres) .	199,266 points	T. Rylova	1957*
Total for four distances (500, 1,000, 1,500 and 3,000 metres) . .	203,299 points	G. Romanova	1958

* U.S.S.R. record better than the world record.

Event	Record	Holder	Year
CYCLING			
W o m e n			
200 metres flying start	12.3 sec.	L. Razuvayeva . .	1955
500 metres flying start	32.8 sec.	L. Razuvayeva . .	1955
1,000 metres flying start	1 min. 12.9 sec. . .	L. Brovina	1955
5,000 metres standing start	7 min. 03.3 sec. . .	N. Sadovaya . . .	1955
100 km. standing start	2 hr. 49 min. 59.7 sec.	L. Golubeva . . .	1955

WEIGHT-LIFTING

Press

Feather-weight . .	119.5 kg.	Y. Minayev	1958
Light-weight . . .	130.5 kg.	F. Nikitin	1958
Welter-weight . .	140.0 kg.	V. Timoshenko . .	1958
Middle-weight . .	148.0 kg.	A. Zhitetsky . . .	1958
Light-heavy-weight	153.0 kg.	V. Stepanov	1958

Snatch

Bantam-weight . .	105.0 kg.	V. Stogov	1957
Light-weight . . .	125.0 kg.	N. Kostylev	1956
Middle-weight . .	138.0 kg.	R. Plyukfelder . .	1958
Light-heavy-weight	146.0 kg.	F. Osypa	1958

Jerk

Welter-weight . .	169.5 kg.	A. Kurnov	1958
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TOTAL FOR THREE LIFTS

Bantam-weight . .	345.0 kg.	V. Stogov	1957
Light-weight . . .	390.0 kg.	V. Bushuyev	1958
Light-weight . . .	392.5 kg.	V. Bushuyev	1958*
Middle-weight . .	450.0 kg.	T. Lomakin	1957
Middle-weight . .	452.5 kg.	R. Plyukfelder . .	1958*
Light-heavy-weight	470.0 kg.	A. Vorobyov	1957

* U.S.S.R. record better than the world record.

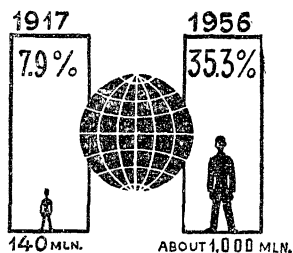
Peace and Friendship Policy

FAMILY OF SOCIALIST NATIONS

THERE ARE A THOUSAND MILLION OF US

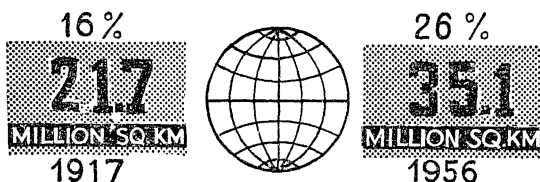
In October 1917 capitalism ceased to be an integral, world-wide system, being superseded by a new, socialist system in the biggest country of the world. Whereas capitalism began to decline, socialism forged ahead. After the Second World War, the Soviet Union ceased to be the only socialist island in the capitalist ocean. Thanks to the defeat of the Hitler coalition and to the revolutionary struggle waged by the working people, new socialist states arose in a number of European and Asian countries. The new social system transcended the boundaries of one country to become a

POPULATION OF THE SOCIALIST COUNTRIES



universal system.

AREA OF THE SOCIALIST COUNTRIES



Besides the Soviet Union, the path of socialism and communism is now being followed by the peoples of China and other socialist countries. The growing socialist world system plays an increasing

role as a champion of world peace, the freedom of the peoples and human progress.

The socialist countries account for 39.4 per cent of the world's output of coal, over 25 per cent of its cast iron and steel, one-third cotton and about 40 per cent grain (1957).



Production in the capitalist countries has never grown at the rate attained by the socialist countries.

INDUSTRIAL OUTPUT IN THE SOCIALIST COUNTRIES COMPARED WITH THE LEVEL OF ITS DEVELOPMENT IN THOSE COUNTRIES IN 1937

	Year	Electric power (000 million kwh.)	Year	Coal (in terms of mineral coal, million tons)	Year	Steel (million tons)	Year	Cotton fabrics (000 million metres)
All the socialist countries	1937	66.8	1937	261.4	1937	23.9	1937	4.6
	1957	327.0	1957	769.0	1957	74.0	1957	13
Soviet Union	1937	36.2	1937	119.4	1937	17.7	1937	2.6
	1957	210.0	1957	397.0	1957	51.2	1957	5.6

FRIENDSHIP SUCH AS THE WORLD HAS NEVER KNOWN BEFORE

Relations between the socialist countries are based on the principles of complete equality, respect for territorial integrity, state independence and sovereignty, and non-interference in each other's internal affairs. Moreover, fraternal mutual assistance, a manifestation of the principle of proletarian internationalism, is a prime element of those relations.

Each socialist country, no matter how big or small, requires aid and support from the other socialist countries and from the international working-class movement. Since the world is divided into two systems, the very existence of each socialist country as such and its further progress are made possible by the existence of the socialist camp and by its economic might and political unity.

The fraternal relations between the Soviet Union and the other socialist countries are based on treaties of friendship, co-operation and mutual assistance signed:

With Czechoslovakia	December 12, 1943
" Poland	April 21, 1945
" Mongolia	February 27, 1946
" Rumania	February 4, 1948
" Hungary	February 18, 1948
" Bulgaria	March 18, 1948
" China	February 14, 1950
" the German Democratic Republic (treaty of relations)	September 20, 1955

The socialist countries have common interests and a common goal. No antagonisms can ever arise between them, all matters can be and are actually settled in strict keeping with the principles of proletarian internationalism, through comradely discussion and frank talks. According as the need arises, recourse is taken to meetings of government and parliamentary delegations or representatives of the Communist and Workers' parties, to friendly visits, conferences, negotiations, exchange of information on bilateral lines and other measures at party or government level.

Frontier issues between the Soviet Union, on the one hand, and Czechoslovakia, Poland and Rumania, on the other, the issue of transferring Port Arthur and Dalny to the Chinese People's Republic, of the legal status of the Soviet troops temporarily stationed in the German Democratic Republic, Poland and Hungary, and numerous other matters were settled with due regard to mutual interests. The November 1957 meeting of the representatives of fraternal Communist and Workers' parties, which resulted in the signing of a Declaration of the Communist and Workers' Parties of the Socialist Countries and a Peace Manifesto, and inter-state and inter-governmental negotiations strengthened the unity of the socialist countries.

"Throughout the course of history, relations between any countries could never have been similar to those existing between the socialist countries, which share joys and sorrows alike, which respect and trust each other, and which help and inspire each other".

Mao Tse-tung

At a time when military blocs have been set up and the arms race continues, the socialist countries join efforts in upholding their interests in the international field, in the United Nations and in other international organizations and in ensuring their security and the inviolability of their frontiers. On May 14, 1955 delegates from Albania, Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Rumania and the Soviet Union signed in Warsaw a Treaty of Friendship, Co-operation and Mutual Assistance. The Chinese Government fully supported the Warsaw Treaty. Unlike the exclusive military alliances formed by the imperialist powers,

the Warsaw Treaty is open to all countries irrespective of their social systems.

The solidarity of the socialist countries has never been and will never be directed against the interests or security of any other country. The socialist countries emphatically oppose the division of the world into military blocs. They concluded the defensive Warsaw Treaty only because the Western Powers would not accept the Soviet proposal for abolishing military blocs and establishing a collective security system in Europe.

The Soviet Union, which is always prepared to help and support its fellow-countries, holds a leading place in the socialist community of nations.

"The leading role of the Soviet Union in no way prejudices the independence of the other socialist countries and, indeed, helps maintain national independence against the encroachments of imperialism."

Palmiro Togliatti

After the victory of the October Revolution it took the Soviet Union about 10 years to break out of diplomatic isolation. Thanks to Soviet support, the other socialist countries succeeded in rapidly strengthening their external position by establishing extensive international relations. The Soviet Union is advocating the admission of all the socialist countries to U.N. membership. In 1955 the United Nations admitted Bulgaria, Hungary and Rumania. The Soviet Union has been fighting for the Chinese People's Republic to take its lawful place in the United Nations and has been supporting China in her struggle for the liberation of Taiwan and other Chinese islands. The Soviet Union supported Poland's demand for the restitution of her western territories and helped the Danubian countries in achieving a just solution of the Danubian problem.

The Soviet Union is true to its obligations and its international duty. It opposed U.S. and British attempts to interfere in Czechoslovakia's internal affairs in 1948 and Hungary's in 1947 and 1949. It helped the Hungarian people put down the counter-revolutionary action launched by foreign reactionaries in October and November 1956.

The peoples of the socialist countries know that the Soviet people will come to their aid if the imperialists ever attempt to change by force the system established in any socialist country.

The consolidation of the socialist countries implies, among other things, consolidation of the Soviet Union and its international position.

WHAT BENEFITS ONE SOCIALIST COUNTRY BENEFITS ALL SOCIALIST COUNTRIES

The socialist countries are rich in natural resources. In 1958 they accounted for almost half the world's prospected iron ore deposits, about 60 per cent of its coal resources, 90 per cent of manganese ore and roughly 70 per cent of potassium salts. Close economic co-operation

provides opportunities for the use of natural resources to the best advantage.

Dozens of new industries have sprung up in the socialist countries. There is no longer any need for each country—except the Soviet Union and China, who have every kind of raw material—to develop such branches of economy as would copy highly developed industries of other socialist countries. It is more advisable for them, taking account of their potentialities, as well as help from and the requirements of the other fraternal countries, to concentrate on expanding those branches for which there are favourable natural and economic conditions. This will enable them to make the utmost of the benefits afforded by the progressing international socialist division of labour.

The socialist countries are developing, in concert and according to long-range plans, the metallurgical, power, mechanical engineering, chemical and other industries.

Economic co-operation and the further specialization of and co-operation between interconnected branches of industry and agriculture are gradually shaping the industrial type of each socialist country and its place in the socialist economic system.

Industrial co-operation made it possible greatly to increase output of ships, automobiles, farm machinery, turbines and other mechanical engineering products in a number of socialist countries.

As a result, the whole of the socialist camp, and each country in particular, saves material resources and promotes labour productivity, rapidly increasing its productive forces and raising the living and cultural standards of its people.

In 1949 the socialist countries set up a Council of Mutual Economic Assistance to encourage economic relations and ensure the successful development of the national economy of each socialist country, exchange economic experience, render each other technological assistance and help in terms of raw materials, food, machinery and other equipment and so on, as well as to co-ordinate economic plans.

In 1957 and 1958, decisions were taken to co-ordinate ten- or fifteen-year development plans for the basic economic branches of the countries represented on the Council of Mutual Economic Assistance.

The co-ordination of plans affords unlimited opportunities for the most effective use of the industrial and raw material resources of all the socialist countries, happily combining the interests of each country with those of the others.

THE SOCIALIST COUNTRIES CAN FULLY MEET THEIR OWN REQUIREMENTS

Trade between the socialist countries is expanding as commercial ties are strengthened.

In 1957 the Soviet Union carried on 74 per cent of its foreign trade with the other socialist countries (as against 54 per cent in 1946).

SOVIET SHARE IN SOCIALIST FOREIGN TRADE IN 1957 (%)

Albania	57	China	50
Bulgaria	53	Korean People's Dem. Republic	55
Hungary	31	Mongolia	82
Dem. Republic of Viet-Nam	9	Poland	31
German Dem. Republic	47	Rumania	55
		Czechoslovakia	34

SOVIET FOREIGN TRADE

(000 million rubles at 1950 rate of exchange)

	1946	1950	1955	1957
Total	5.7	13.0	27.4	33.3
Socialist countries	3.8	10.5	20.6	24.5

Trade between the Soviet Union and the other socialist countries is conducted under commercial treaties and long-range and yearly trade agreements on mutual deliveries of commodities at mutually agreed equitable prices, which are fixed for at least one year and are therefore not affected by the continuous price fluctuations typical of the capitalist market.

The rapidly developing industry of the socialist countries needs equipment, fuel, mineral raw materials and metals. The Soviet Union has therefore increased deliveries of these commodities in recent years. In 1957 equipment accounted for some 17 per cent of all the Soviet exports to the socialist countries (as compared with 9.8 per cent in 1946). While in 1948 and 1949 the Soviet Union delivered to the socialist countries mainly odd items of industrial equipment for the speedy rehabilitation of factories, today nearly one half of the equipment it exports to the socialist countries is complete plant for various extractive and manufacturing industries.

The Soviet Union also exports: iron, manganese and chromium ores, to Poland, Czechoslovakia and the German Democratic Republic; cast iron, rolled iron and steel, and piping, to the German Democratic Republic, Rumania, Bulgaria, Hungary and Czechoslovakia; non-ferrous metals and alloys, to the German Democratic Republic, Czechoslovakia, Hungary and Poland; oil and oil products, to China, Poland, Czechoslovakia, Hungary and the German Democratic Republic; cotton, to the German Democratic Republic, Poland, Czechoslovakia, Hungary, Rumania and Bulgaria; grain (chiefly wheat), to the German Democratic Republic, Czechoslovakia, Poland, Hungary and Albania.

In 1957 the Soviet Union supplied the socialist countries with 10,800,000 tons of iron ore, 2,400,000 tons of cast iron, rolled stock and piping, 8,600,000 tons of coal, coke and anthracite, and 7,700,000 tons of oil and oil products.

The German Democratic Republic holds first place in Soviet foreign trade (19.5 per cent in 1957).

The Soviet Union exports to the German Democratic Republic coal, anthracite, oil, iron ore, rolled iron and steel, and grain, and imports from there machinery and other equipment (over 40 per cent in 1957), knitted wear and haberdashery (about 50 per cent in 1957).

Second place in Soviet foreign trade is held by the Chinese People's Republic (15.4 per cent in 1957).

The U.S.S.R. supplies China with machinery and other equipment, oil products and chemicals, and imports from China tin and other ores, rice, meat, fruit, tea, oil-bearing crops, wool, silk, jute and clothes. Part of deliveries from China goes to the Soviet Far East and Siberia, which helps cut expenditure on deliveries of industrial raw materials and food from the European part of the Soviet Union.

The Soviet Union imports: coal, cement, glass, zinc, fabrics, sea-going ships and rolling stock from Poland; electric equipment, railway engines and cars, ships and consumer goods from Hungary; oil products, cement and farm produce from Rumania; consumer goods, mining industry products and farm produce from Albania, Bulgaria, the Democratic Republic of Viet-Nam, the Korean People's Democratic Republic and Mongolia.

The Soviet people consider it their international duty to help the other socialist countries, and act accordingly. The U.S.S.R. seeks to render other countries practical assistance in strengthening and expanding their economy, in particular through industrialization, which is the mainstay of national sovereignty and of economic and political independence.

Since the end of the war the Soviet Union has granted the other socialist countries loans exceeding 28,000 million rubles (as of the middle of 1957).

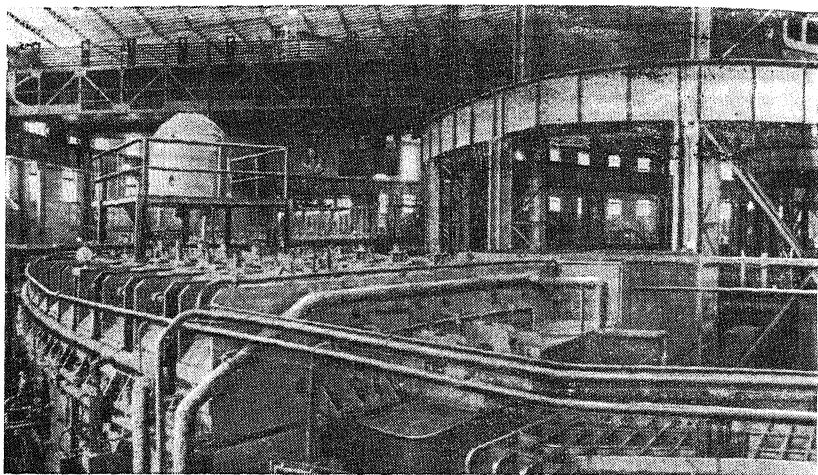
Soviet loans are offered for long terms, at two and even less per cent interest, without any political strings attached. They are generally repaid, not in gold or in expensive foreign currency, but in deliveries of such goods as are usually exported by the country using the loan.

In 1956 and 1957 the Soviet Union granted: to Poland, a loan to the tune of 100 million rubles in gold and goods, as well as a long-term loan of 700 million rubles to pay goods, and delivered 1,400,000 tons of grain on credit; to Bulgaria, 300 million rubles to pay farm machinery and 700 million rubles to build a nitric fertilizer plant; to Rumania, 100 million rubles in gold and goods and 510,000 tons of grain; to Hungary, 875 million rubles; to the German Democratic Republic, a loan of 485 million rubles in 1953 and of 340 million in 1957; to China, 300 million dollars in 1950 to pay equipment and materials, and 520 million rubles in 1954.

On account of the loans, the Soviet Union supplies machinery, plant and automobiles, tractors and combines, food and industrial raw materials.

Between 1946 and 1958 the socialist countries built or began building, in collaboration with the Soviet Union, more than 600 factories, mills, shops and separate installations.

Soviet assistance was drawn on in building the Nowa Huta Steel Works in Poland, one of Europe's largest; a metallurgical plant in



Proton

Hungary, oil refineries in Rumania, a chemical plant and thermal electric station in Bulgaria, the Karl Marx Hydro-Electric Power Station and a textile mill in Albania, etc.

The nearly 30 iron and steel works now under construction are planned to turn out 15 million tons of steel a year, or 150 per cent more than the entire pre-war output of steel in China and the countries of South-East Asia and Central Europe put together.

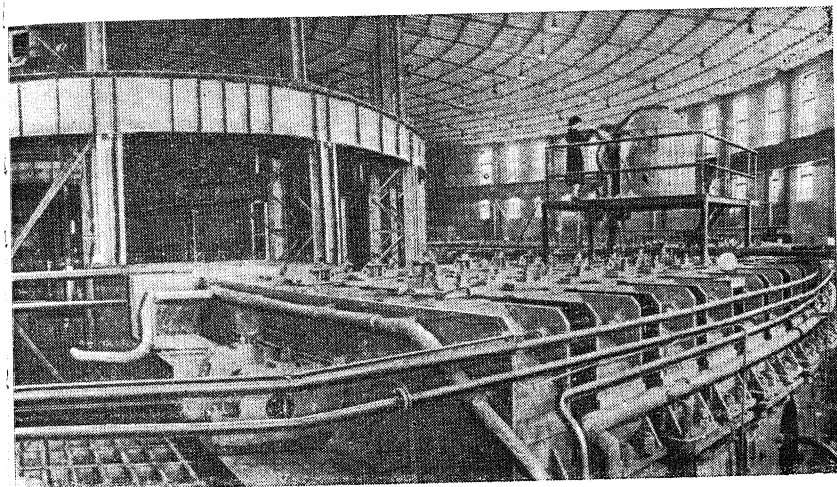
The plants that are building or have been built, will be able to put out 120,000 tons of copper a year, about 850,000 tons of nitric fertilizers, over 140,000 tons of sulphuric acid, 500,000 tons of caustic soda and soda ash, 55,000 automobiles, 40,000 tractors, etc.

The capacity of all the power plants now being built with Soviet help in the socialist countries will be 8,000,000 kw. They will be able to generate over 23,000 million kwh. of energy annually, or twice as much as Poland, Czechoslovakia, Hungary and Rumania combined generated in 1937.

In exchange for deliveries of plant, the Soviet Union receives export items on the usual terms. It does not share in dividends from the plants built.

Fulfillment of the Soviet Union's seven-year economic plan will make for the expansion of economic, scientific and technological co-operation between the socialist countries and for more extensive use of the tremendous advantages of the socialist system, thereby accelerating economic progress in each socialist country.

Extended inter-state specialization and industrial co-operation, rational distribution of the industries that will harmoniously combine the national interests of each socialist country with those of



synchrotron

the entire socialist camp will constitute a new stage in the progress of the international socialist division of labour and a major source of a higher rate of growth of the productive forces in all the socialist countries. The Seven-Year Plan (1959-65) envisages continued expansion of the Soviet Union's international economic relations and foreign trade.

Within the current seven-year period, the foreign trade of the Soviet Union and the other socialist countries will increase by more than 50 per cent compared with 1958.

FRIENDS HAVE NO SECRETS

The scientists of the socialist countries are working in close contact on the solution of big problems. By sharing scientific, technological and industrial achievements and delegations of experts, the socialist countries are enabled to benefit from the results of the latest scientific and technological investigations, new machines and working methods, and modern organization methods in industry. Hence there is no need for each socialist country to spend time and money in solving problems already solved in other fraternal countries. Research and designing institutes, too, co-ordinate their work.

The Soviet Union has signed agreements on scientific and technological co-operation with the following countries:

Poland	March 5, 1947
Czechoslovakia	December 11, 1947

Hungary	July 26, 1949
Rumania	February 17, 1950
Bulgaria	February 18, 1950
German Dem. Republic	September 27, 1951
Albania	April 19, 1952
China	October 12, 1954
Korean People's Dem. Republic	February 5, 1955
Yugoslavia	December 19, 1955

**EXCHANGE OF SCIENTIFIC AND TECHNOLOGICAL DOCUMENTATION
BETWEEN THE U.S.S.R. AND OTHER SOCIALIST COUNTRIES**

(as of Oct. 1, 1958)

Capital construction projects	{ Received by the Soviet Union from socialist countries	148
	{ Given by the Soviet Union to socialist countries	2,213
Drawings of machinery and other equipment	{ Received	1,463
	{ Given	6,268
Descriptions of technology	{ Received	1,181
	{ Given	2,460

From 1954 to 1958 the Soviet Union made available to China over 7,500 sets of various technical documents. China reciprocated with some 450 sets.

The U.S.S.R. turned over gratuitously: to Czechoslovakia and Poland, all the technical documentation required for the manufacture of the Donbas cutter-loader; to Poland, those for the "Warsaw" car and "Lublin" lorry; to Hungary, those for the S-153 coal-loader and for tractors, trolley-buses and harvester combines.

The Soviet Union is drawing on Czechoslovakia's experience in the production of reinforced concrete and Poland's in coal mining and the manufacture of mining equipment. Hungary has supplied it with technical documentation for the manufacture of certain reinforced concrete units and the construction of telephone exchanges. From their Chinese friends, the Soviet people are borrowing experience in the production of silk, paper, reinforced concrete piping, certain foodstuffs and chemical products. Chinese doctors turn over to their Soviet colleagues medicines and methods of treatment used in Chinese folk medicine.

Mutual visits of experts are arranged for the transfer of experience and for technical assistance. In 1957 the Soviet Union sent over 2,000 specialists to other socialist countries and received more than 2,500 specialists.

The scientists of the socialist countries are co-operating in the peaceful uses of atomic energy. The Soviet Union supplies other socialist countries with atomic equipment, helps them build experimental atomic piles and accelerators of elementary particles and furnishes them with fissile materials for reactors. Atomic research centres are being set up in China, Poland, Bulgaria, Rumania and other

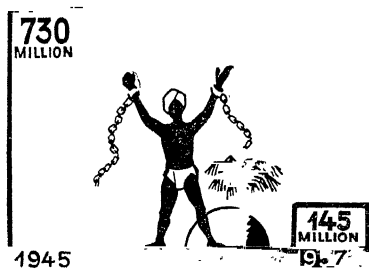
countries. In Czechoslovakia, the German Democratic Republic, Poland, Rumania and China, the atomic reactors built with Soviet help are already in operation. The Soviet Union is assisting the German Democratic Republic and Czechoslovakia in building atomic power stations. A Joint Nuclear Research Institute was established in Dubna, Moscow Region, in March 1956. The Soviet Union transferred to it the Institute of Nuclear Problems and the electrophysical laboratory of the Academy of Sciences of the U.S.S.R. with the latest giant installations for the study of the atomic nucleus.

For the first time in history, science there has found a form of organization that accords with its lofty aim—joint effort by the scientists of different countries.

FOR INDEPENDENCE AND EQUALITY

There were only a few independent states in Asia and Africa several decades ago. As the result of a powerful national-liberation movement which swept over the two continents, 80 per cent of their colonial

POPULATION OF THE COLONIAL COUNTRIES



population have won independence during the last 12 years. Over 20 new states have arisen in what was colonial territory. The end of the colonial system is drawing near as the peoples go on shaking off the chains imposed by it.

This revolutionary process was greatly fostered by the example of the Soviet Union, which has been fighting, ever since it came into being, for the liberation of the peoples, against war, colonial plunder and the exploitation of man by man and the equality of nations.

In December 1917 the Council of People's Commissars sent a message to all the working Moslems of Russia and the East, stressing that the peoples of the Land of Soviets were championing freedom for all the oppressed nationalities of the world.

A people which oppresses other peoples cannot be free.

In 1917 the Soviet Government gave Finland her independence. It rejected the Anglo-Russian agreement directed against the independence of Iran, renounced the tsarist treaties on the partition of Poland and called for granting the right to self-determination to the peoples of Ireland, Egypt, India, Indo-China and other countries.

True to its internationalist duty, the Soviet Union supports the peoples fighting against colonialism, invariably comes out for the national independence of the peoples in all international organizations, at world conferences and at other meetings and opposes attempts to interfere in the internal affairs of other countries and to launch aggression.

The U.S.S.R. was the first to recognize the independence of Afghanistan and establish diplomatic relations with her.

The Turkish people were strenuously defending their independence against the foreign interventionists. And although Soviet Russia was experiencing serious difficulties, she helped Turkey and established friendly political and economic relations with her in 1919-23.

In 1935 and 1936 the Soviet Union stood up for the independence of Ethiopia.

The initiative taken by the Soviet Union played an important part in bringing about the cease-fire in Korea in 1953 and in Vietnam in 1954.

Within the United Nations, the Soviet Union steadfastly upheld the rights and independence of Syria, the Lebanon, Egypt, Tunisia and other countries.

In 1956 the firm stand adopted by the U.S.S.R. helped in putting an end to the imperialist attack on Egypt launched by Britain, France and Israel.

In 1957 the Soviet Union gave warning to the imperialist forces which were trying to unleash a war against Syria.

In 1958 the Soviet Union condemned U.S. and British acts of aggression against the Lebanon and Jordan, and their threats of using military force against the Republic of Iraq and the United Arab Republic. It demanded that a conference of the Heads of Government of the Great Powers be called at once to discuss the situation in the Middle East and that U.S. troops be immediately withdrawn from the Lebanon, and British troops, from Jordan.

Before the Soviet Union, no great power had ever concluded equal treaties with economically underdeveloped countries. The Soviet state annulled the onerous treaties concluded by tsarist Russia's government with Eastern countries, and signed equal treaties of friendship with Afghanistan, Turkey and Iran, and later—in 1924—with China. In 1955 the Soviet-Afghan Treaty of Neutrality and Mutual Non-Aggression, signed on June 24, 1931, was prolonged, and a treaty of friendship was signed with Yemen.

Advocating the equality of big and small countries and peoples and their national sovereignty, the Soviet Union bases its relations with the Eastern countries on strict adherence to the five principles of peaceful co-existence of countries with different social systems, approved by the Bandung Conference of 29 Afro-Asian countries in 1955, that is, mutual respect for territorial integrity and sovereignty, non-aggression, non-interference in each other's internal affairs, equality and mutual benefit, and peaceful co-existence.

In 1957 the Soviet Union took part in the Cairo Conference of Afro-Asian Solidarity. The conference was attended by the delegates from 45 countries, whose population exceeds 50 per cent of mankind. The U.S.S.R. supported the conference decisions.

Entirely new economic relations, based on equality and mutually beneficial co-operation, are taking shape, for the first time in history, between a highly developed industrial power—the Soviet Union—and economically underdeveloped countries fighting for their independence.

The Soviet Union has trade and payment agreements with India, the United Arab Republic, Indonesia, Burma, Tunisia, Yemen,

Pakistan, Iraq, the Lebanon, Cambodia, Morocco, Turkey, Afghanistan and Ceylon. It is trading with Thailand, Ethiopia, Sudan and Libya. Commercial treaties and agreements are concluded on mutually advantageous terms, without any conditions of a political, economic or military nature.

The Soviet Union is far from using a purely commercial approach to its relations with the countries receiving economic aid. Those relations are developed in such a way as to expand and strengthen the national economy of underdeveloped countries and to help them fulfil their programmes and plans for industrialization and economic development in general, increase employment and raise the standard of living of their peoples.

South-East Asian and Middle Eastern countries pay Soviet deliveries of industrial equipment and other commodities either in their own currency, or in counter-deliveries of commodities that they normally export. In some countries, such as India, the profit derived from the sale of the commodities is spent by the U.S.S.R. on the purchase of local raw materials and manufactured goods.

The Soviet Union buys Indian spices, tea, raw hides and jute, Afghan and Iranian raw hides, cotton, wool, dried fruit and oil seeds, Egyptian cotton and rice, Turkish cows, sheep and goats, Burman rice and Moroccan citrus fruit. It also purchases manufactured goods and handicraft wares. In India, for example, the Soviet Union buys jute articles, footwear, woollen fabrics and handicraft wares.



SHARE OF SOUTH-EAST ASIAN
AND MIDDLE EASTERN COUNTRIES
(per cent, 1957)



In imports to the U.S.S.R.

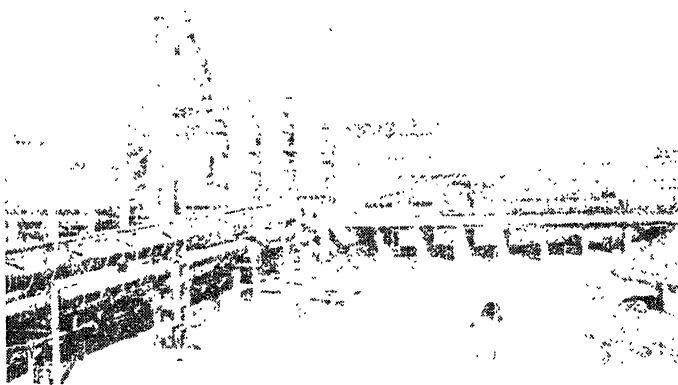
Small raw hides	65
Jute fabrics	100
Cotton	99
Raisins	74
Spices	51
Rice	50
Wool	26
Tea	44

In exports from the U.S.S.R.

Machinery and other equipment	13
Ferrous rolled stock . .	17
Oil and oil products . .	10
Cotton fabrics	49
Cement	51
Sugar	45

The Soviet Union contributes to the progress of industry and agriculture in other countries. It does not seek to sell them goods which they produce in sufficient quantities themselves, or goods whose import may prejudice local production.

As the textile industry has made headway in Afghanistan of late years, the Soviet Union in 1957 reduced its deliveries of cotton fabrics to that country and, at the request of Afghanistan, increased the sale of motor vehicles and industrial equipment. In the early years of its existence the Indian Republic was short of food and wheat was



Iron and Steel Works, Bhilai, India

therefore the main item of Soviet exports to India. Today pride of place in Soviet exports to India belongs to ferrous rolled stock, industrial equipment (plant for a steel mill, oil-drilling and mining equipment).

The Soviet Union has always been willing to help other countries maintain their political and economic independence and to resist economic pressure from the imperialist powers.

In 1957 its trade with the economically underdeveloped countries increased almost six-fold in comparable prices as against 1950.

The Soviet Union not only supplies goods to economically underdeveloped countries, but also renders them technical assistance in building factories and mills and carrying out other projects, and also helps them train specialists. Workers and specialists from the United Arab Republic, India and other countries study in Soviet higher schools or take practical training in Soviet industry.

In a number of economically underdeveloped countries, Soviet specialists carry out geological survey, design, assemble and put into service Soviet plant. The Technoexport foreign trade association has signed contracts for the designing of various industrial plants, shops and other projects.

In Kabul, Afghanistan, the Soviet Union helped build a mechanical bakery (capacity, 50 tons of products a day), a flour mill (60 tons of flour a day), an elevator (20,000 tons of grain), oil dumps and an asphalt and concrete works. The Soviet Union will also help Afghanistan in carrying out nine other projects, including hydro-electric stations, an airfield, highways, etc.

At the request of the United Arab Republic's Government, the Soviet Union has agreed to take part in the construction of the first section of the Aswân High Dam by sending an adequate number of specialists, supplying the required machinery and other equipment, as well as materials that are in short supply in the U.A.R., and by granting a loan of up to 400 million rubles to cover these expenditures.

A steel mill designed by Soviet engineers is being built in Bhilai with Soviet help. Its capacity will exceed 1,000,000 tons of steel a year. In February 1959 the mill began producing coke and cast iron. It is planned to make the utmost use of Indian industry to produce part of the equipment and materials. Indian specialists and workers are enabled to train at Soviet plants.

The U.S.S.R. has no share whatever in the capital invested in foreign industries, nor does it take part in managing the plants built or being built with its assistance in other countries. For the payment of deliveries of plant and materials and technical aid, the Soviet Union grants long-term loans on favourable conditions.

In 1954 it granted Afghanistan a loan to finance the construction with Soviet help of two elevators, flour mills and a mechanical bakery.

In 1956 Afghanistan received a long-term loan of \$100 million at two per cent interest for irrigation, power and transport development.

In September 1956 Indonesia was granted a loan of about \$100 million for 12 years to pay equipment, technical assistance, etc.

In 1957 Syria was granted a 12-year loan at 2.5 per cent interest to pay designing and prospecting, deliveries of equipment, business trips by specialists and other kinds of technical aid given by Soviet bodies.

In 1957 India received a long-term loan of 500 million rubles to cover the currency expenditures involved in industrial development.

In early 1958 Egypt was granted a 12-year loan at 2.5 per cent interest to pay technical aid. The loan will be paid back in Egyptian goods, mainly cotton, rice and other farm produce.

The Soviet Union is taking part in rendering technical assistance to economically underdeveloped countries within the framework of the U.N. It sends to those countries highly competent experts, equipment for educational institutions and so on.

FOR PEACEFUL CO-EXISTENCE

NO CLASSES OR GROUPS IN THE U.S.S.R. WANT WAR

On October 25 (November 7), 1917 Russia's workers and peasants, who had risen in arms, addressed in terms of peace and friendship all the peoples exhausted by three years of imperialist war.

All international problems should be settled by peaceful means, the Lenin Decree on Peace announced. It condemned plunder, the use of force and territorial conquest, and called for peaceful, good-neighbourly relations, for a just democratic peace without annexations or indemnities, a peace based on the right of the peoples to shape their own destinies.

Wars of conquest were concomitants of all the earlier periods, from ancient slavery to modern capitalism. The two world wars led to the destruction or crippling of more than 85 million people. Socialism needs peace, for its aim is to guarantee the prosperity, happiness and complete freedom of man.

The peoples of the Soviet Union are far from coveting alien territory. They are engaged in peaceful construction and intent on seeing an abundance of material and cultural benefits in their country as soon as possible. The Soviet Union, which takes up one-sixth of the earth's surface, has all that it requires for the satisfaction of the growing requirements of its people.



"The great labour community of Russia has taken its destiny into its own hands in the form of the Soviet system, and needs nothing but peace to make use of all its untold potentialities. That is why peace is our chief aim." (Statement by the Soviet Government, September 1920.)

Mr. Jawaharlal Nehru, Prime Minister of India, said that wherever he went in the Soviet Union, he found a passionate desire for peace.



The Soviet people ... do not want war, and are willing to do all they can to prevent it, according to Mr. Philip C. Garatt, spokesman for Canadian business.

The Russian people and their government want peace, said Mr. Cyrus Eaton, American public leader.

With regard to other countries, the Soviet Union bases its policy on the Leninist principle of peaceful co-existence of states with different social systems and advocates peaceful economic competition between socialism and capitalism.

What the Soviet Union proposes to the capitalist countries is competition in raising the standard of living of the people and not in the arms race, in building housing and schools and not military bases and rocket-launching sites, in expanding mutually advantageous trade and cultural exchanges and not the "cold war."

Co-existence of the two systems does not imply co-existence or co-operation of the two ideologies. Socialist and bourgeois ideology are mutually exclusive. The Soviet people are convinced that the future belongs to socialism and communism, but they do not intend to implant it by force, by exporting it to other countries. A theory expressing the laws of social development is bound to win over millions of people. The Soviet Union has never taken up and will never take up arms against any country with an eye to imposing its system or ideology upon it.

As a matter of fact, the Soviet people consider predatory war a very grave crime against mankind. And this attitude has found legislative embodiment in the Law of Responsibility for Crimes Against the State, passed by the Supreme Soviet of the U.S.S.R. on December 25, 1958. Under that law, war propaganda in any form is punishable by three to eight years' imprisonment.

THE U.S.S.R. SAYS NO TO WAR BY DEEDS

Ever since the Lenin Decree on Peace was issued, the Soviet state has been taking steps to prevent war. No matter where aggressors hatched a military conflict, the Soviet Union invariably exposed their actual motives and sounded the alarm, rallying hundreds of millions of people against war.

Here are some facts:

1922.—International conference in Genoa, Soviet Government proposes universal disarmament to the extent of abolishing standing armies.

1922.—Disarmament conference in Moscow, with the Baltic countries attending. Called on Soviet initiative.

1927.—Preparatory Commission for disarmament conference meets. Soviet draft resolution on universal disarmament.

1927.—Soviet Union adheres to Briand-Kellogg pact, which bound the signatories to refrain from war as a means of national policy.

1931.—European Commission of League of Nations meets. Soviet Union proposes signing a pact on economic non-aggression.

1933.—Economic conference in London. Soviet Union moves for an economic armistice.

1933.—Soviet Government proposes defining the concepts *aggression* and *aggressor*, and signs conventions on the definition of *aggressor* with a number of European and Asian countries.

1934.—Soviet Union accepts invitation of 30 states to join League of Nations, considering that at a time of growing international tension the League could become a certain instrument for counteracting the policies of the forces of aggression.

1935-39.—Soviet Union comes out against threat of fascist intervention in Abyssinia, Austria, Czechoslovakia and Spain and for rendering every assistance to those countries. Soviet Union offers Czechoslovakia support and aid against aggressor.

1939.—Soviet Union calls on France and Britain to reach agreement on mutual assistance against aggression and to sign a military convention.

1941.—Anti-fascist coalition of nations formed.

1946.—First session of U.N. General Assembly. Soviet Union moves for controlling and reducing armaments.

1947.—Soviet Union moves at U.N. General Assembly session for condemning war propaganda.

1952.—Soviet Union proposes Five-Power peace pact.

1954.—Soviet Union proposes signing an all-European treaty on collective security in Europe.

1956.—Supreme Soviet of the U.S.S.R. issues a declaration on the prohibition of atomic weapons and the discontinuance of their tests.

1956.—Supreme Soviet of the U.S.S.R. calls on all parliaments to reduce the armed forces of their countries.

While the Western Powers virtually rejected universal disarmament, the Soviet Union reduced its Armed Forces by 640,000 in 1955 and 1,200,000 more in 1956. In 1958 the Soviet Government adopted a decision to reduce the Armed Forces by another 300,000 men, of whom 41,000 were withdrawn from the German Democratic Republic and over 17,000, from Hungary.

1957.—Supreme Soviet of the U.S.S.R. calls on U.S. Congress and British Parliament to co-operate in reaching agreement between the Soviet Union, the United States and Britain on the immediate discontinuance of test explosions of atom and hydrogen bombs.

1958.—Supreme Soviet of the U.S.S.R. sends message to US Congress regarding discontinuance of nuclear weapon tests.

1958.—Supreme Soviet of the U.S.S.R. resolves to instruct the Chairmen of its two Chambers to call on the parliaments of the anti-Hitler coalition countries and countries which suffered from Hitler aggression during the Second World War to join efforts for the prevention of the atomic and rocket armament of the German Federal Republic.



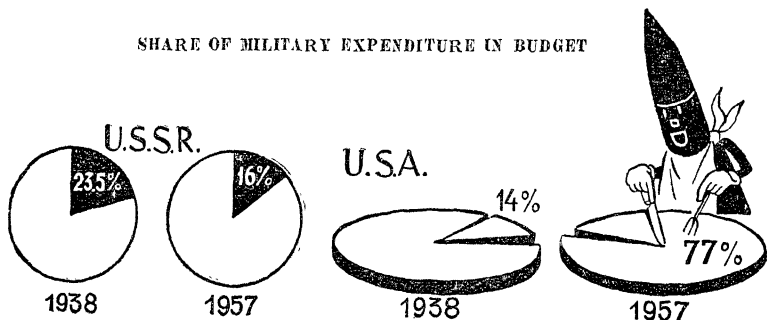
1959.—Soviet Government calls on the Governments of the United States, Britain, France, Poland, Czechoslovakia and other countries which fought Nazi Germany to hold a peace conference that would draft and sign a German peace treaty. The Soviet draft treaty contained specific provisions for the removal of tension in Europe and the creation of conditions for the peaceful, democratic development of the German people. Such a treaty would also contribute to the reunification of Germany, which can be achieved only through negotiations between the Germans representing the German Federal Republic and the German Democratic Republic.

1959.—The Soviet Government submitted to the United Nations a proposal for general and complete disarmament.

The Soviet Union made peace with Austria, ceased the state of war with Germany and Japan, normalized relations with Yugoslavia, strengthened friendship and co-operation with India, Indonesia, Burma, the United Arab Republic and other countries in Asia and Africa, and helped in ceasing hostilities in Korea, Viet-Nam and Egypt.

The Soviet Union has not a single military base on foreign soil. The Soviet troops stationed at the Chinese naval base of Port Arthur, which had been used jointly, were withdrawn to the last man on May 24, 1955. The naval base at Porkkala Udd, Finland, the last Soviet strategic base abroad, was abolished in 1956.

SHARE OF MILITARY EXPENDITURE IN BUDGET



In 1959 the Soviet Union plans to spend on defence only 15 per cent of the budgeted expenditures.

"Such peaceful steps should be taken not only by the Soviet Union and other peace-loving countries, but also by all the Western Powers. Then one could say confidently that all the problems which mankind is concerned about will be effectively solved."

N. S. Khrushchov

The Soviet Government did not merely proclaim the principle of peaceful co-existence of countries with different systems but has been doing all in its power to promote political ties with all countries.

The Soviet Union had diplomatic relations with the following numbers of countries:

1920	2 COUNTRIES
1926	20 COUNTRIES
1940	29 COUNTRIES
1959	64 COUNTRIES



The following is a list of the countries with which the Soviet Union maintains diplomatic relations today:

Afghanistan	German Democratic Republic	Morocco
Albania	Ghana	Nepal
Argentina	Great Britain	Netherlands
Austria	Greece	New Zealand
Belgium	Guatemala	Nicaragua
Bolivia	Guinea	Norway
Bulgaria	Hungary	Pakistan
Burma	Iceland	Poland
Cambodia	India	Rumania
Canada	Indonesia	Saudi Arabia
Ceylon	Iran	Sudan
China	Iraq	Sweden
Costa-Rica	Israel	Switzerland
Czechoslovakia	Italy	Thailand
Democratic Republic of Viet-Nam	Japan	Tunisia
Denmark	Korean People's Democratic Republic	Turkey
Dominican Republic	Lebanon	United Arab Republic
Ecuador	Liberia	Uruguay
Ethiopia	Libya	U.S.A.
Federal Republic of Germany	Luxemburg	Yemen
Finland	Mexico	Yugoslavia
France	Mongolia	

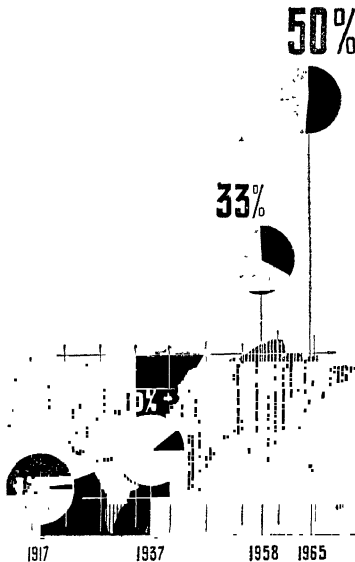
Personal contacts between statesmen make for mutual understanding and help settle disputes, eliminate distrust and strengthen friendship.

1955—1958

The Soviet Union was visited by leading personalities from 20 countries, including India, Indonesia, Japan, France, Finland, Yugoslavia, China, Poland, Czechoslovakia, Bulgaria, Rumania, Hungary, Albania, the Democratic Republic of Viet-Nam and the German Democratic Republic.

Leaders of the C.P.S.U. and the Soviet state visited Yugoslavia, India, Burma, Afghanistan, Britain, Poland, Finland, Czechoslovakia, the German Democratic Republic, China, the Democratic Republic of Viet-Nam, the Mongolian People's Republic, Indonesia and other countries.

SHARE OF THE U. S. S. R. AND
THE ENTIRE SOCIALIST
SYSTEM IN WORLD INDUSTRIAL
PRODUCTION



The autumn of 1959 was marked by an outstanding event. The Head of the Soviet Government, N. S. Khrushchov visited the U.S.A. This visit contributed greatly to the relaxation of international tension.

The Soviet Union is a member of more than 160 international organizations, one of the founders of the United Nations (October 1945) and permanent member of the U.N. Security Council.

In 1956 an Association for the Promotion of the U.N. was established in the U.S.S.R. The Soviet Union is a member of the World Association for the Promotion of the U.N. In 1955 a National Parliamentary Group of the U.S.S.R. was formed, which joined the Inter-Parliamentary Union.

Today no international problem of any importance can be settled effectively without Soviet participation.

We live at a time when war is no longer a fatal necessity. There are now powerful

social and political forces which command impressive means of preventing an imperialist war or foiling the imperialists' plans if they should succeed in starting a war.

Fulfilment of the Soviet Union's Seven-Year Plan, combined with economic progress in the other socialist countries, will further strengthen the socialist world system. In 1958 the Soviet Union's share in world industrial output was almost 20 per cent (as against 3 per cent in 1917 and 10 per cent in 1937) and the share of the entire socialist system exceeded one-third. In 1965, all the socialist countries will be

putting out more than half the world total of industrial products. In other words, the socialist world system will gain absolute superiority over the capitalist system in the decisive sphere, material production.

The implementation of the Soviet Seven-Year Plan is in keeping with the basic interests of the working people of the world and with those of progressive humanity.

A decisive change in the international political balance in favour of peace will make it really possible to eliminate war altogether as a means of settling international issues.

FOR ECONOMIC CO-OPERATION

In antiquity the scales were opposed as a symbol of trade to the sword as a symbol of war. People realized that he who is thinking of trade cannot be scheming war. The great trade routes used by merchant caravans and ships brought countries and continents closer together and helped various peoples know each other better and establish friendly relations among themselves.

Trade on a sound basis, without barriers or obstacles of any kind, is the best means of establishing the most extensive relations between people of different countries.

The Soviet Union not only wants to co-exist with other countries on one planet but also strives for peaceful economic co-operation with all countries irrespective of their social systems.

The Soviet Union seeks economic ties with other countries not because it cannot do without foreign goods but because it prefers buying certain commodities abroad to producing them, just as other countries often prefer to buy certain goods from the Soviet Union to producing them.

The Soviet Union believes that economic relations should develop only on the principles of equality, mutual benefit and non-interference in each other's internal affairs.

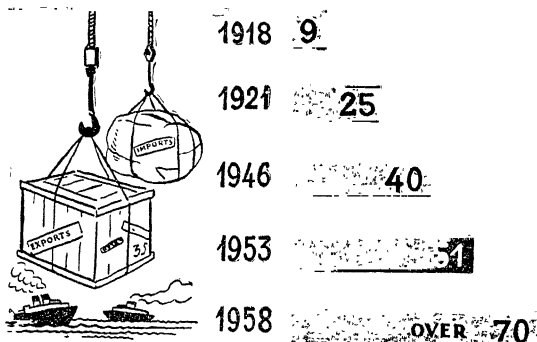
The U.S.S.R. recognizes only such trade relations as rule out all discrimination on either part and promote international peace and co-operation. That is why it upholds the principle of equality of big and small countries alike, a principle which it has adhered to throughout its history, striving to remove obstacles to normal trade.

Immediately after the Soviet state was established, the capitalist countries sought to destroy it through economic blockade. But, to quote Lenin, "as regards the blockade, experience has shown that it is a moot point which of the two parties it hits harder, whether those who are blocked or those who do the blocking." Economic blockade by the main capitalist countries boomeranged. Business men realized that it was not in their best interest to isolate the Soviet Union.

The capitalist countries were compelled to establish trade relations with the Soviet state.

In 1920 Soviet co-operatives signed trade agreements with their Italian counterparts, an association of Swedish firms and the British

NUMBER OF COUNTRIES WITH WHICH THE U. S. S. R.
TRADED



Chamber of Commerce. On March 16, 1921 a provisional trade agreement was signed with Britain. Trade with our country on equal and mutually beneficial terms was winning over an increasing number of countries.

In 1958 the Soviet Union had inter-governmental commercial treaties or agreements with 47 countries.

The economic progress of the Soviet Union, the increasing economic co-operation of the socialist countries and the peaceful policy of the Soviet Union made possible a considerable expansion of trade between the U.S.S.R. and the other socialist countries, as well as with the capitalist countries.

In 1957 the volume of Soviet foreign trade increased more than six-fold as against the 1938 volume in comparable prices. Whereas before the Second World War the Soviet Union held sixteenth place in the world for scale of foreign trade, today it holds sixth place after the United States, Britain, the German Federal Republic, Canada and France.

SOVIET FOREIGN TRADE
(million rubles at 1950 rate of exchange)

	1913	1918	1938	1946	1957
Foreign trade					
Total	10,090	395	2,411	5,690	33,277.3
Exports	5,298	28	1,021	2,615	17,526
Imports	4,792	367	1,090	3,075	15,751.3

Soviet trade with the capitalist countries in 1957 (8,757 million rubles) exceeded the total volume of Soviet foreign trade in 1938 in comparable prices. However, the opportunities for mutually advantageous trade with the capitalist countries are not being used

properly because of the system of trade barriers set up in the West at the height of the "cold war." The capitalist countries' share in Soviet foreign trade, which in 1946 was 45 per cent, dropped to 19 per cent in 1950. After some countries were compelled to ease their system of discriminatory bans, that share increased to 26 per cent in 1957.

The capitalist countries in the lead in trade with the Soviet Union are Finland, Britain, the German Federal Republic and France.

Prior to the Great October Socialist Revolution Russia's farm produce exports amounted to 70 per cent of the total, while exports of manufactured goods were only 30 per cent.

Before the Revolution backward agricultural Russia was for the foremost countries of the West a supplier of grain (30.4 per cent of the world's total), foodstuffs and raw materials (sugar, oilcake, bran, raw hides, manganese ore), and a purchaser of most manufactured goods, from electric bulbs and sewing-machines to railway engines and farm machinery.

Besides machinery and other equipment, cast iron, cotton, wool, tea, chemical products, rubber and non-ferrous metals, Russia imported large quantities of jewelry for the bourgeoisie and landlords.

Foreign debts and manufactured goods imports were paid in grain and raw materials.

The October Revolution released Russia from dependence on foreign countries in external trade. The task set to Soviet foreign trade was to contribute to the progress of the country's socialist economy.

In 1957 manufactured goods made up 85.7 per cent of Soviet exports and farm produce, a mere 14.3 per cent.

The bulk of commodities exported by the Soviet Union today consists of finished articles.

SHARE OF FINISHED ARTICLES IN SOVIET EXPORTS

1938 38.5%

1957 ca. 60%

Before the Revolution Russia's industrial exports consisted mainly of raw materials—timber, manganese ore, etc.

Today most Soviet export items are equipment, products of the iron and steel industry and manufactured goods.

During the years of socialist industrialization the Soviet Union purchased abroad the plant and metals it lacked.

In 1931-32, the Soviet Union held first place in the world as an importer of machinery and other equipment. Nearly 75 per cent of its imports were made up of machinery and other equipment and of metals; in 1932, about 50 per cent of the world exports of machinery and other equipment went to the U.S.S.R.

**SHARE OF MACHINERY AND OTHER EQUIPMENT
IN SOVIET IMPORTS**

(per cent)

1925	16.6	1932	55.6
1928	33.6	1957	23.9

The policy of socialist industrialization followed by the Soviet Union enabled it to win economic independence and to change from a country importing the basic means of production into a country exporting heavy industry products to numerous countries. For volume of exports of industrial equipment, the Soviet Union in 1957 held fifth place in the world after the United States, Britain, the German Federal Republic and the German Democratic Republic. In 1950 it held eleventh place.

In 1957 the Soviet Union exported 2,600 million rubles' worth of equipment as against 150 million in 1946.

**SHARE OF MACHINERY AND OTHER EQUIPMENT
IN SOVIET EXPORTS**

(per cent)

1913	0.3	1938	5	1957	15
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The Soviet Union exports almost every type of machinery and means of conveyance, from TU-104 jet aircraft, turbodrills and cutter-loaders to complete plant for heavy industry. In 1957 about half the export of machinery and other equipment to the capitalist countries consisted of deliveries of complete plant for the industries of India, Afghanistan and the United Arab Republic. The U.S.S.R. exports several hundred sizes of metal-cutting machines, various turbines, forge and press, hoisting and hauling, road-building and building-industry equipment, plant for the food and light industries, machinery for the printing and publishing industry, paper-making and farm machines. About 10 per cent of the machinery and other equipment exported is made up of cars and lorries. In 1957 Soviet motor vehicles were exported to 33 countries as against 27 in 1955.

The trade mark *Made in the U.S.S.R.* may be seen on cars in Helsinki or Stockholm, on machine-tools in the United Arab Republic or Indonesia, on tractors ploughing the fields of India or on bulldozers used by road builders in the mountains of Afghanistan.

At the same time, the Soviet Union continues to be a major supplier of raw and other materials and of fuel. As an exporter of manganese ore, it ranks first in the world, of iron ore fourth (after Sweden, France and Canada), of saw-timber third (after Canada and Sweden) and of asbestos third (after Canada and the Union of South Africa). The year 1957 was a record one for the export of grain, coal, oil and oil

products, asbestos, apatite, iron ore, ferrous rolled stock, copper, zinc, lead and tin.

Twenty years ago the Soviet Union had to import cotton. Today it holds second place in the world (next to the United States) as an exporter of cotton (319,000 tons in 1957).

The Soviet Union is both a major supplier and a purchaser of numerous commodities required for the national economy and the population. In 1957 it imported equipment for the building, chemical, timber and paper, food and light industries from 19 countries. Over 40 per cent of the imported equipment was means of transport.

Since the end of the war, the Soviet Union has imported about 25,000 metal-cutting machines, some 27,000 railway waggons, over 3,000,000 tons of ferrous and non-ferrous rolled stock and a large number of merchant, passenger and fishing vessels.

The Soviet Union also purchases building materials, solid fuel and fuel oil.

About 75 per cent of Soviet imports are raw materials and consumer goods. For imports of natural rubber, the U.S.S.R. ranks third in the world after the United States and Britain. It imports raw materials for its textile industry (wool, long-fibre cotton, jute, rayon and synthetic silk yarn) from more than 30 countries, raw hides from 25 and fruit and vegetables from 17 countries.

The Soviet Union is an importer of oil seeds, vegetable oil, blubber and fish.

During the post-war years it has imported 3,800,000 tons of sugar, 2,300,000 tons of rice, 1,200,000 tons of meat and meat products, over 100 million metres of woollen fabrics and about 55 million pairs of leather shoes.



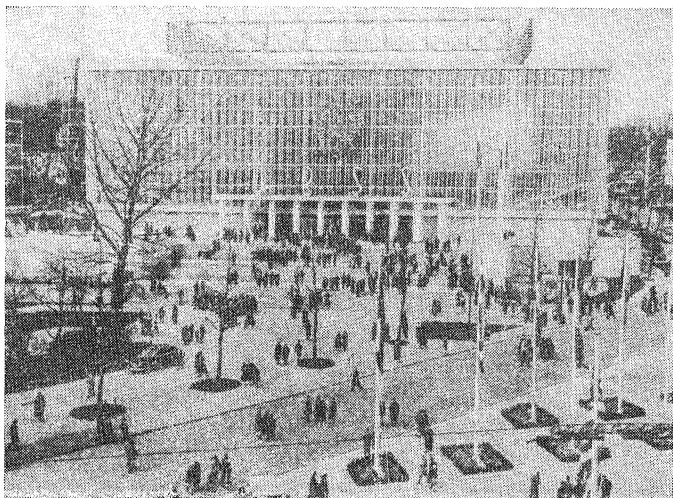
In 1957 the consumer goods imported from various countries exceeded 10 per cent of the Soviet Union's retail trade.

To promote international co-operation and expand its trade with other countries, the Soviet Union takes part in international fairs and exhibitions.

The U.S.S.R. was first represented at a world fair in 1922. Subsequently it participated in the world fairs in Paris (1937), New York (1939) and Brussels (1958).

After the war, the Soviet Union was represented at 112 fairs and exhibitions.

Soviet exhibitions in the post-war years were held in more than 30 countries, including Argentina, Austria, Britain, Bulgaria, China, the German Democratic Republic, Greece, Hungary, India, Indonesia, Italy, the Netherlands, Poland, Thailand, Turkey, the United Arab Republic, the United States and Yugoslavia. They drew over 120 million visitors.



Soviet Pavilion at the Brussels Fair

The Soviet Union's economic and cultural achievements were demonstrated at many exhibitions, such as the Exhibition of Economic and Cultural Achievement in Peking and Shanghai, Soviet Industrial Exhibition in Buenos Aires, Exhibition of School Education in Warsaw, Scientific and Technological Exhibition of the Peaceful Uses of Atomic Energy in New Delhi or Soviet Exhibition of Radio and Television Equipment in Belgrade. The Soviet exhibition in China in 1954-55 was visited by more than 11,200,000 people, that held in Delhi in 1955 by some 3,000,000 people in two months, in Cairo (1957) by more than 400,000 people in two weeks.

The World Fair in Brussels (1958) was an outstanding international event. The Soviet Pavilion there was visited by more than 30 million people. The U.S.S.R. was awarded over 520 prizes and medals.

Visitors' comments go to show that exhibitions help the peoples of the capitalist countries get rid of the erroneous notions about the Soviet Union, open their eyes to the immense progress made in the Soviet Union's economy and culture, to the peaceful intentions of the U.S.S.R., to its desire to expand international co-operation in all spheres, and facilitate the establishment of trade relations.

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Numerous economists, sociologists, historians and politicians in the West are wondering about the reason for the vast achievements of the U.S.S.R. The answers they give are most varied, some of them being correct. But they hardly ever mention the main factor, namely,

free labour by people freed from exploitation and shaping their own destinies. To be sure, the people were an inexhaustible source of organizational and creative talent even before they won political power, but that talent was held down and could not really assert itself. The socialist revolution released the creative energy of the people. And that is the reason for the progress already made and an earnest of future progress in the Soviet Union and the other countries which have chosen the socialist way. It is also what makes the socialist countries invincible.



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